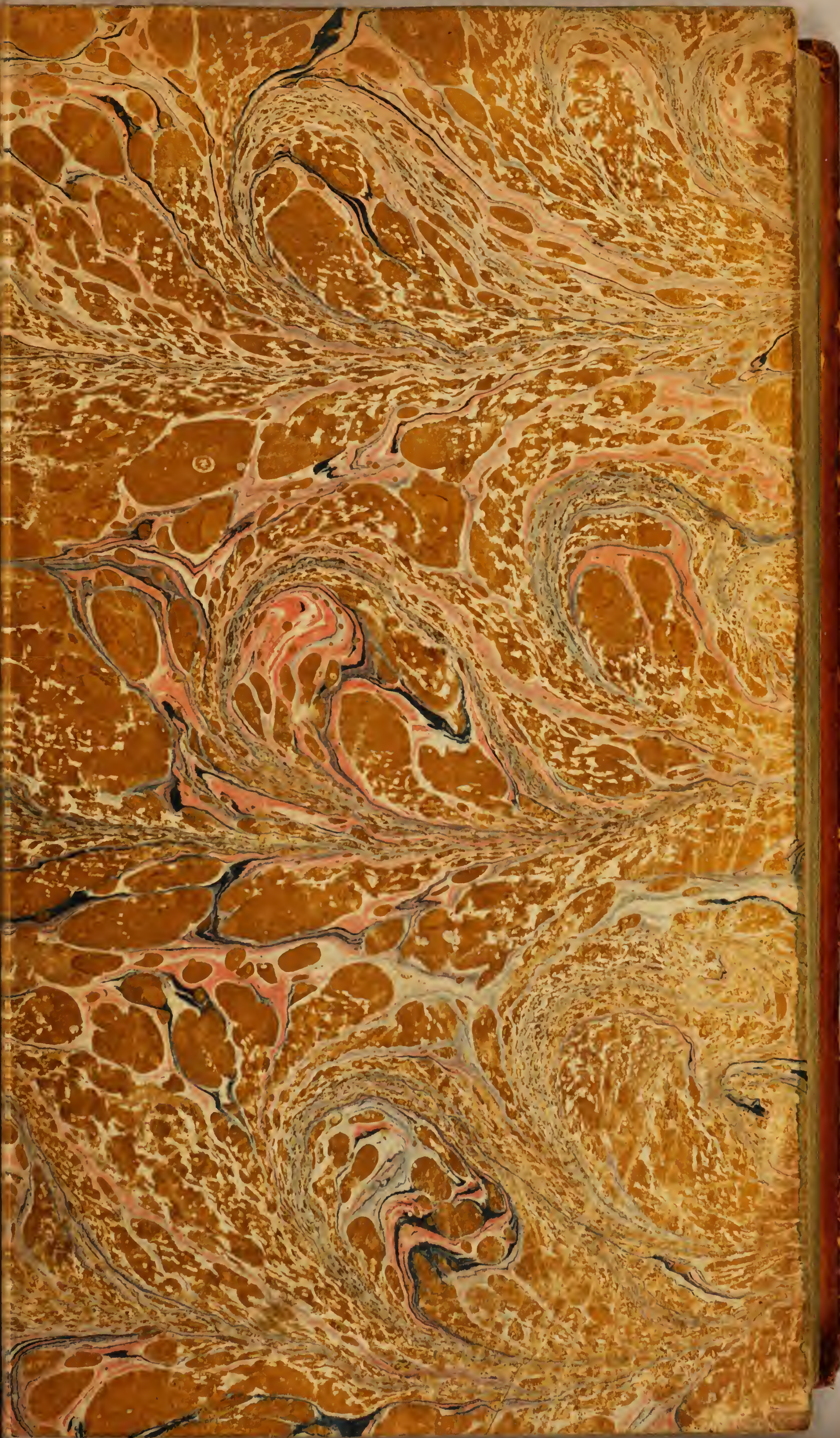




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OBSERVATIONS

ON THE

DISEASES

IN

LONG VOYAGES TO HOT COUNTRIES,

AND PARTICULARLY

On those which prevail in the EAST INDIES.

Published by Order of the COURT of DIRECTORS
of the Hon. EAST INDIA COMPANY.

OF THE

OBSERVATIONS

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DISEASES

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LONG VOYAGES to HOT COUNTRIES,

AND PARTICULARLY

On those which prevail in the EAST INDIES.

By JOHN CLARK,

Formerly Surgeon of the TALBOT Indiaman.

L O N D O N,

Printed for D. WILSON and G. NICOL, in the Strand.

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CHICAGO

TO
Sir GEO. COLEBROOKE, Bart.
CHAIRMAN,
LAURENCE SULLIVAN, Esq.
DEPUTY-CHAIRMAN,
AND

The rest of the DIRECTORS of
the Hon. the United COMPANY
of MERCHANTS trading to the
EAST INDIES.

GENTLEMEN,

EVERY attempt to prevent or
alleviate the diseases to which
Europeans are subject in long voy-
ages, and in the East Indies, where
the Company possess such extensive
territories, has met with your ap-
probation and encouragement ; I
therefore hope you will think
favourably of this performance,

A 3. which

vi DEDICATION.

which has no other object in view than to obtain so important and desirable an end.

As the following observations were made in your service, I beg leave to offer them to the public under the sanction of your names. I am, with the greatest respect,

GENTLEMEN,

Your most obedient

and most humble servant,

London, March
3, 1773.

JOHN CLARK.

P R E F A C E.

THE following sheets contain an account of the most fatal diseases incident to Europeans in the East Indies. The observations were collected from a number of cases, and it was the amusement of a vacant hour at sea to put them into the order in which they now appear. Having been examined by Dr. Sylvester, by whom the medical concerns of the Company are conducted, he was of opinion that they might be in some degree beneficial to mankind. At his request, and with the approbation of the Directors, the author has been encouraged to offer them to the public.

The gentlemen who practise medicine in the service of the East India Company have.

an opportunity of seeing a great number of sick, of observing the commencement, the progress, and various changes of diseases, and likewise of exhibiting the medicines, and knowing with certainty the effects which they produce. As many able practitioners have been engaged in the service, from the advantages which they enjoy, it might have been expected that the knowledge of the diseases in the East Indies would long ago have arrived at great perfection. It has, however, unfortunately happened, that few observations have been communicated, by immediate eye-witnesses.

In a Latin Thesis published at Edinburgh, a description is given of the putrid remittent fever, which happened at Bengal in the year 1762. Dr. Badenoch, formerly surgeon of the Nottingham Indiaman, in the fourth volume of the London Medical Essays, has also made some observations on the fevers*

* By Dr. James Lind, physician at Edinburgh.

which usually occur in voyages to the East Indies, and is one of the few practitioners who has ventured to prescribe the bark freely.

Dr. Cleghorn, and Dr. Lind, physician to Haslar hospital, have great merit in being the first who introduced a rational system of practice in the fevers of hot climates. Although they do not recommend the Peruvian bark when fevers approach to the nature of continuals, and even seem doubtful of its safety in intermittents, unless in the remissions, yet they have greatly extended its use, at a time when theory had almost brought it into disrepute.

Since the days of the judicious Dr. Morton, the use of the bark has been greatly limited; but it must give every one a sensible pleasure, that, in opposition to every prejudice, the exhibition of this valuable medicine is becoming every day more general. Physicians now prescribe it more liberally in every species of remitting and intermitting fevers.

x P R E F A C E.

fevers. Some do not even scruple to recommend it in all fevers which are not accompanied with inflammation. The success and propriety of this practice has been sufficiently proved by Dr. Millar, in his ingenious Observations on the prevailing Diseases of Great Britain.

The following work is divided into two parts. The first chapter contains an account of the weather and diseases which occurred in a voyage to Bengal. This was judged the more necessary, as so many ships from Europe annually sail to the East Indies, and the diseases to which Europeans are subject in voyages to that part of the world being invariably the same. In the second chapter is given an account of the air, unhealthy seasons, and the prevailing diseases in various parts of the East Indies. The third contains an exact meteorological register, kept during the course of a voyage to China, in the years 1771 and 1772.

In the second part, after having classed the diseases, practical observations are made on each of them. The fever and flux being the most fatal and frequent are treated at considerable length. Their symptoms are described, observations are made upon the remedies usually recommended, and that method of cure laid down which was found most successful. The other diseases are passed over in a more cursory manner, it being judged sufficient to mention their general treatment, and only to point out such particulars in practice as seemed necessary in hot climates.

In the Appendix, some alterations are proposed in the sea-provisions, regimen for the sick, and medicine-chest, on board the East India ships. How far they are practicable, or can be actually adopted, must be left to the determination of others. The author has been induced to offer them, as at present the greatest attention
is

xii P R E F A C E.

*is paid to the health of the Company's
servants, and every proposal, which seems
conducive to this important end, meets with
the most candid reception.*

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OBSERVATIONS

ON THE

DISEASES which most frequently
occur in long Voyages to hot
Countries, &c.

PART I.

General Observations on the Weather and
Diseases, in various Places, in the East
Indies.

CHAP. I.

*A general Account of the Weather and Dis-
eases in a Voyage from England to Bengal,
in the Years 1768 and 1769.*

THE Talbot Indiaman, fir Charles
Hudson, bart. commander, sailed
from the Downs the 22d of March, 1768,
and arrived at her moorings, in the river
of Bengal, the 25th. of August. There
were embarked in all two hundred and
B forty

forty men, one hundred and eight belonged to the ship; the rest were passengers and military recruits for India.

The month of March, till the 26th, was very cold and intemperate, with easterly winds; during the remainder of the month, the winds were westerly, and the weather still continued raw and uncomfortable, with fogs at night. Our passage down the Channel was favourable, and we soon arrived in more temperate latitudes, making the island of Madeira the 6th of April.

Rainy days, 1, . 16, . . 25, . 27, 28, . 30, . . .

Lat. day 23, 49 deg. 18 min. N. 30 day, 43 deg. 37 min. N.

The complaints of this month consisted of catarrhal fevers, with hard coughs and stitches in the sides. Some had sore throats; a few were afflicted with the rheumatism and other diseases, the consequences of catching cold. These complaints were relieved by venæsection, antimonials in small doses, diluent pectorals, opiates, blisters, and totally disappeared with the warm weather.

weather. Two of the rheumatic cases were very obstinate; the symptoms continued for many months, although a variety of medicines were tried. At last, the pains, which became fixed to the joints, were removed by rubbing mercurial ointment upon the parts affected*.

April, from the beginning till the 17th, was warm, dry, and temperate; the north-east trade † was favourable and steady.

* Vide Chapter on the Rheumatism.

† The perpetual winds betwixt the tropics which have got the name of trade-winds from their being so regular, and consequently so useful in navigation, seem to have a considerable influence upon the health of seamen. The perspiration occasioned by these winds cools and refreshes the air, which otherwise would be insupportable. While they are steady, in every voyage, I have observed the seamen enjoy an uninterrupted state of health; but as soon as they cease, the air becomes hot and suffocating, and diseases more or less prevail.

Betwixt the tropics, where the heat of the sun is not only intense but constant, those winds observe great regularity, and are easterly all the year round; but on each side of the line they vary a little, and are north-east on the north side, and south-east on the south.

steady. From this to the end of the month, light winds and frequent calms prevailed; the weather was excessive sultry; but the heat of the vertical sun was, in a good measure, obstructed by a clouded sky.

Rainy days, 21, . . thunder and lightning, 23, 27, . squally.

April 1, in lat. 40 deg. 36 min. N. 10 day, lat. 25 deg. 52 min. N. 20 day, lat. 5 deg. 49 min. N. 30 day, lat. 2 deg. 41 min. N.

From the beginning to the 10th of May, the heat of the weather rather increased, although the trade continued pretty brisk. From this till the 20th, pleasant breezes, with some intermediate days of calm; and as we daily increased our latitude, and had frequent showers, the air became very

The trade-winds generally extend to the 28th degree of latitude, on either side of the line, but as they come near the equator disappear, and variable winds and calms take place. What is said here is only to be understood of the open sea; for near the shores there are many circumstances which alter the regularity of these winds.

tem-

temperate. To the end of the month, fresh gales, cold, wet, and squally weather.

Rainy days, 5, 7, 9, 10, · 11, · · · 14, 17, · 18, · · · 20, 24, 25, · 26, · · 27, 29, · 30, · · ·

May 10, lat. 17 deg. 24 min. S. 20 day, lat. 29 deg. 26 min. S. 30 day, 34 deg. 31 min. S.

Towards the latter end of last month and beginning of this, many of the ship's crew were seized with remittent fevers. The disease was generally ushered in with slight rigors, bitter taste in the mouth, head-ach, pain above the eye-brows, nausea, vomiting, and sometimes a purging of gall succeeded; the pulse at first was very quick, but soft, the countenance flushed, the skin very hot, and the thirst intense. The fever generally remitted, and in the most continued form, exacerbations were evident at night. When the patient did not neglect his case, the disease was easily cured; however, three escaped with difficulty. The cure depended on cleansing the primæ viæ, by

small doses of tartar emetic, which indeed often removed the fever in a few hours or, when it came to remit, it readily yielded to the bark. The disease did not require bleeding; for in a few days it was accompanied with great prostration of strength and spirits. In such cases, the bark and wine were given freely, with the best effect, without paying regard to the remissions or exacerbations.

In June, we were in high latitudes, off the Cape of Good Hope, and found the weather cold and disagreeable; the atmosphere was hazy and moist. Towards the end of the month, the weather became more dry and temperate, with light breezes from the southward.

Rainy days, 1, 2, 3, 4, . . 5, 6, 7, 8, 12, . . . with thunder and hard squalls, 13, 17, . 18, 19, . 22, 23, 24, 25, .

Lat. June 1, 34 deg. 35 min. S. 10 day, 35 deg. 33 min. S. 20 day, 32 deg. 9 min. S. 30 day, 23 deg. 19 min. S.

In the beginning of the month, the scurvy made its appearance; only six or eight were

were affected. The symptoms proceeded to no great length, except in two of the soldiers. As the disease advanced, their ham-strings became affected; they were subject to profuse hæmorrhages from the nose and gums; and one of them frequently fainted upon the least motion. They were plentifully supplied with wine, sugar, &c. and had the usual sea medicines, with proper topicals; however, all proved very ineffectual to retard the disease, which daily encreased; all which the remedies could do, was barely to keep the patients alive till we arrived at Madagascar. Besides this complaint, three of the soldiers laboured under a fever, attended with a low sunk pulse, of which one of them died.

Upon the first of July we anchored at St. Augustine's Bay, Madagascar. This large island extends from 12 to 26 degrees south latitude, and abounds with all sorts of refreshments. The climate is healthy, the air dry. The appearance of the country about the bay is unpromising; nothing presents itself to the eye but craggy pre-

cipices, and a swampy valley beset with woods, and watered by a river which overflows each tide. A stranger, however, must not draw a picture of the island from this unfavourable confined spot; for, about a mile up the river, the ground is high and clear of woods. The country a little inland is extremely fertile, and affords a variety of agreeable landscapes, for which they are entirely indebted to nature, the male inhabitants making no improvements in husbandry, which is here the province of the females. But nature seems to produce every thing almost spontaneously. The vegetable productions are good, and in great abundance, such as rice, India corn, sugar-cane, sweet potatoes, melons, pumpkins, oranges, &c. In this island, there is a breed of very fine cattle; the mutton and fowls are good; and there is great variety and plenty of fish.

From April till November, the weather is dry, clear, calm, and sultry; but the heat of the climate is tempered by sea and land breezes, regularly succeeding one another; and such is the happy situation

tion of this island, that on one side it enjoys the perpetual trade-winds, and on the other the monsoon. During the above period, Europeans enjoy good health at the bay ; and, at that time, it ought to be preferred to every other place of refreshment, after passing the delightful settlements of the Cape.

The rainy season here commences about November, and seldom continues longer than March, during which time, the atmosphere is dark, gloomy, and boisterous, and much rain falls. From the accounts of ships that have touched here during this period, we are told, that the climate is very unhealthy, and fatal to Europeans. The situation of the bay makes it evident that this must be the case at that place ; but as the villages of the natives, though at no great distance from the valley, are situated on high ground, they enjoy uninterrupted health all the year round ; and, indeed, the hale vigorous constitution of the inhabitants, their long life, and total exemption from all chronic diseases, are
sus-

sufficient evidences of the salubrity of the island.

All the ships which are obliged, through stress of weather or sickness, to put in here, during the rainy season, should have their sick tent erected two miles up the river, near the village of the natives, where the land is high; or the sick may be put daily ashore, at Tent Rock, opposite to the place where ships usually anchor, to take exercise, and have the benefit of the land air in the day-time, care being taken that they return to the ships before the evening dews happen, which, at this period, are very considerable. Thus the bad effects of nocturnal air, so productive of diseases, in many situations, in hot climates, will be prevented. However, no such precautions are necessary in the dry season.

We sailed from St. Augustine's Bay the 11th of July; till the 17th, the weather was calm, the air moist and suffocating; and from that till the end of the month, we
had

had pleasant gales, hazy, and very sultry weather.

Rainy, 16, · 17, · · 18, · 25, 26, · 27.

Lat. day 1, 23 deg. 26 min. S. 20 day, 10 deg. 4 min. S. 25 day, 49 min. S. 30 day, 8 deg. 14 min. N.

Towards the end of the month, a putrid fever of a very bad kind made its appearance, attended with delirium, low pulse, petechiæ, livid vibices, and hæmorrhage from the nose, of which one died, and three or four more escaped with difficulty. It is proper to observe, that the symptoms of putrefaction only run high in those who had such an antipathy against the bark that they could not be prevailed upon to continue the use of it; whereas they who took this medicine, and continued to use it, very soon got free of the fever. As the patients, when taken ill, were removed from the rest, the infection did not become general.

August, from the beginning to the 25th, was sultry, hazy, and wet, with strong north-westerly winds. On the 25th, we anchored at Culpee, in the river
of

of Bengal. From the 25th to the end of the month, the weather was very unsettled, with much thunder and lightning, accompanied with torrents of rain.

Rainy days, 8, 12, 13, . . . thunder and lightning, 15, . . . thunder and lightning, 16, 19, 21, . . . thunder and lightning, 25, 26, 27, 28, 29, 30, 31, . . . thunder and lightning.

Lat. August 10, 5 deg. 48 min. N. 19 day, 21 deg. 18 min. N.

In the two first weeks of August, many of our people, officers, passengers, as well as the common seamen, were attacked with nausea, often a vomiting, but always a purging of gall, accompanied with fixed or flying pains in the bowels ; for the first and second days, the stools were large and bilious ; but in all it terminated in gripes and fruitless straining. In two or three, the disease made its appearance with all the symptoms of a bilious colic ; and in one it began as a colera. All these bilious complaints, whether we give them the names of diarrhea, colera, or dry belly-ach, when neglected, had an equal tendency

dency to terminate in the dysentery ; but when proper remedies were applied at first, the diseases were easily removed. The particular treatment I shall refer to another place, only I must remark, that there is a very great analogy amongst all these diseases ; and that those who suffered most by these complaints were more liable to putrid remittent fevers and dysenteries in the following months.

I shall now proceed to give a general account of the weather and the diseases that occurred during the months we staid at Bengal, leaving the description of the country, as far as it seemed to influence these diseases, to another place.

The first two weeks of September were intolerably hot, sultry, and suffocating, with fogs and dews at nights. On the 16th and 17th, it blew fresh from the east. During the remainder of the month, the weather continued as intemperately hot as ever, with few or no intermediate breezes.

Rainy days, 4, 6, . . 8, 9, 21, 22, . . with thunder, lightning, and hard squalls.

Neither

Neither was the month of October more temperate; nay, the weather, if any thing, was more insupportably sultry, and scarcely a single breath of air was observable till the 28th, when refreshing breezes rendered the weather more cool and temperate for the remainder of the month.

Rainy days, 2, 6, 7, 8, 10, &c.

During these unhealthy months, fevers and fluxes of a very putrid nature, were very fatal at Culpee, and carried off numbers of seamen belonging to the ships lying there. At last they became so universal, that, by the end of September, there were few or no hands on board of our ship capable of doing duty. They likewise raged at Calcutta, and were particularly fatal to those who had lately arrived.

The first weeks of November were calm and sultry in the middle of the day; but the air was refreshed by pleasant breezes, frequently in the forenoon, and always in the afternoon. From the 16th to the end of the month, the weather was serene, pleasant, and temperate.

No

No rain ; wind northerly.

In the beginning of December, the weather was agreeable, and the winds westerly. On the 9th, the wind shifted to the south. From this till the 14th, it was remarkably close and calm in the day-time, and there were thick fogs and heavy dews at nights. The rest of the month, the winds were northerly and the weather delightful, as it usually is here at this season of the year.

No rain.

About the 10th of the month, several of the seamen were afflicted with diarrheas, which I shall call colliquative, as they were accompanied with very copious thin stools, without pain, gripes, or tenesmus. In twenty-four hours, they reduced the patient to the greatest degree of weakness, and soon made the countenance look pale and ghastly. The principal remedies employed were very gentle emetics ; magnesia and rhubarb, with opium, to restrain the profuse discharge, and chicken broth and wine, to support the strength of the patient ; and, in many cases, the bark, at
first

first in light infusions, and afterwards in substance, was indispensably necessary to strengthen the relaxed viscera.

January, 1769, was a pleasant, healthy, and temperate month. Our people suffered no inconvenience from the climate. Two or three were in the convalescent state of the flux, one laboured under the hepatitis, and two had other abdominal obstructions, the consequence of frequent attacks of the diseases of the former months.

Rainy day, 1, winds for the most part northerly.

February was also serene, dry, and temperate, with agreeable breezes, except in the middle of the day, when the air was calm and sultry for a few hours; but, at this time, as also in the two preceding months, the climate is so healthy, that exposition to the sun and exercise, which before seldom failed to produce instant sickness, were attended with no danger, as the sky was generally clouded, the marshy grounds dry, and the air free from noxious exhalations.

Rainy

Rainy days, 5, 25, 26, . . . with much thunder and lightning, and strong north-westerly winds.

The beginning of March was also temperate. About the 11th, the weather became close and sultry, and continued so till the 22d, unless when hard squalls happened, which were accompanied with thunder, lightning, and deluges of rain. As we were at sea during the remainder of the month, the weather, though warm, was very agreeable.

Rainy days, 11, . . . thunder and lightning; 12, . . . 14, 19, . . . with much thunder and lightning.

We sailed for England the 22d of March. At this time almost all our people were able to do duty; however, several of them, who had suffered much in the sickly season, had not regained their usual strength and vigour. After the delightful months already described, this may, at first sight, seem extraordinary; but when it is considered on what poor diet seamen are obliged to live at this place, their slow recovery from diseases

C

will

will be easily accounted for. The animal food consists of lean beef, affording little nourishment; and pork, which makes a considerable part of their diet, is very bad; greens and other fresh vegetables are neither to be procured in such plenty, nor at such a moderate rate, as to become an article of the ship's provision; the only vegetables which they have in abundance are yams and rice.

During the two last months we remained at Bengal, about twenty of our people had the venereal disease, which they contracted at Culpee. The infection, for the most part, made its appearance in the form of ulcers; warts and raspberry-like excrescences on the penis; amongst this number, only two had a virulent gonorrhœa. The disease, though topical, was only to be cured by mercury; however, several cases resisted its power, as a very inconsiderable quantity of the specific, whether exhibited internally, or applied externally, run to the mouth, and was speedily carried off by salivation; so great was the relaxation occasioned by the heat of
of

of the climate, and so poor and dissolved was the crasis of the blood, long after the destructive diseases of the sickly season *.

The first week of April was calm and sultry. From that to the 23d, there were light winds, with frequent calms, and very hot weather. The remainder of the month was more temperate, with refreshing breezes.

Rainy day, 29, . .

Lat. April 1, 13 deg. 41 min. N. 10 day, 11 deg. N. 20 day, 7 deg. 47 min. N. 30 day, 5 deg. 44 min. N.

In April, five of our people had remitting fevers. In one of the patients the disease was accompanied with symptoms of putrefaction, great prostration of strength, hæmorrhage from the nose, and a delirium, with a low sunk pulse. Although bark and wine were given freely, yet his fever continued for about three weeks.

The month of May, though very warm and sultry, was healthy. In the first week,

* Vide Chapter on the Venereal Disease.

20 *Weather and Diseases in a Voyage*

being under the equator, we were becalmed, but the heat of the sun was obstructed by a clouded sky, and the air refreshed by agreeable showers. During the rest of the month, as the trade-wind became steady, and we daily increased our distance from the sun, the weather was more temperate.

Rainy days, 1, . . 2, 3, 4, 5, 6, . with lightning; 11, 12, 14, 18, 19, 22, . . 27, 29, 31, .

May 28, 11 deg. 32 min. S. 30 day, 22 deg. 5 min. S.

June, from the beginning to the 7th, was temperate and cool, and the winds favourable. From this to the end of the month, for the most part, it blew fresh from the north-west, and the weather was cold, wet, and stormy.

Lat. June 18, 30 deg. 20 min. S. 20 day, 32 deg. 4 min. S.

Rainy days, 1, 2, 7, 8, 9, . . . 10, 11, 13, 15, 17, 20, 22, 27, . . with much lightning.

July was very cold and stormy. From the beginning to the 5th, it blew hard, with

with frequent squalls. From this till the 20th, the weather was very uncomfortable and stormy, one violent hard gale continually succeeding another. The high seas and contrary winds obliged us, for the most part, to lie to ; and, as the ship became leaky, both from the water getting in betwixt her planks, and from the waves and large seas breaking over the decks, it was necessary to keep the pumps almost constantly at work. From the 20th to the end of the month, the weather was variable and unsettled.

Rainy days, 3, 4, 5, . . hail, 9, 10, . . . thunder and lightning ; 12, some hail, thunder and lightning ; 13, 14, 15, thunder and lightning ; 18, continual rain, hail, thunder and lightning ; 19, thunder and lightning ; 20, 21, 22, 24, 26, 27, .

Lat. July 1, 35 deg. 45 min. S. 6 day, 36 deg. 36 min. S. 10 day, 37 deg. 24 min. S. 20 day, 34 deg. 51 min. S. 30 day, 23 deg. 55 min. S.

In the beginning of June, two of our people began to be affected with the scur-

vy; the continuance of the cold moist weather, the nastiness of the decks, the corruption of their common diet, the biscuit as well as salted provisions, all contributed to make its progress very rapid. On the 18th of July, twenty of the seamen were rendered incapable of all duty, and some of them reduced to the last dreadful stage of this distemper; and many of those who still kept the deck, were more or less affected with it. Altho' the officers, who lived well, and lay in drier apartments, were not totally exempted from the disease; yet the symptoms ran to no great height in any of them, except in one who was greatly weakened by an antecedent fever.

The unfavourable weather still continuing, on the 19th of July, it was unanimously agreed to bear away for Madagascar, as being the nearest and best port for refreshment, and the only means of preserving the lives of our seamen, and of course the ship and cargo, which now seemed to be in imminent danger. We arrived there on the 1st of August, and

anchored in St. Augustine Bay. During our run to that place, the disease increased daily, the symptoms grew worse, and greater numbers were affected. Out of the ship's company, which, at our leaving Bengal, consisted of no more than eighty-seven, officers and boys included, thirty-three of the best hands were confined below, many of them in the last stage of the disease; and those who still continued upon deck were so much enfeebled, that the duty of the ship required the assistance of the passengers and their servants.

We lay at Madagascar all the month of August, during which time the weather was settled, the air dry, and the heat of the sun pretty intense in the day-time; but at nights it was chilly and cold, owing to fresh sea-breezes blowing from the afternoon till midnight.

As soon as we arrived at this plentiful island, the sick were supplied with oranges in abundance, and vegetable soups, thickened with greens and pumpkins. It was, however, judged prudent, that the weakest of them should be kept

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on board for a few days before they were sent to the sick tent. By this means, and by the free use of wine allowed by our commander through the course of the disease, we had the good fortune to lose none of our people. By the 20th of the month, they were all capable of duty except four, three of whom had still monstrous swelled legs and contracted ham-strings; the countenance of the other patient was bloated and he was subject to profuse hæmorrhages from the nose.

On the 7th of September, we sailed from St. Augustine's Bay. As we approached the high latitudes of the Cape of Good Hope, the weather was again cold, wet, and uncomfortable.

Rainy days, 5, . . . 15, 16, 17, 21, 22, 23, . . 25, 28, 30, . with lightning.

Lat. September 18, 24 deg. S. 20 day, 33 deg. 56 min. S. 30 day, 35 deg. 36 min. S.

The first week of October was cool, dry, and temperate. From this to the end of the month, the weather was warm
and

and serene, the heat of the sun being tempered by refreshing breezes.

Rainy day, 1, .

Lat. October 10, 24 deg. 4 min. S. 30
day, 14 deg. 31 min. S.

On the 17th of this month, we anchored at the island of St. Helena, and set out to sea again on the 29th.

This island is situated in the middle of an immense ocean, and in a tract where the south-east trade seldom intermits; the climate is therefore serene, temperate, and pleasant; and through the whole year, is neither subject to the extremes of heat nor cold. This stupendous rock appears very barren at first sight; but, upon entering into the country, the eye is transported with scenes and landscapes romantic beyond description, consisting of good pastures, verdant vales, and high irregular precipices. The soil in the valleys is rich and deep, and would produce every kind of grain, roots, and greens, if it was not for an amazing number of rats and mice, which devour the seed as soon as thrown into the ground.

A spe-

A species of yam grows here in great plenty, which is sliced and boiled for a long time, and afterwards toasted : before it is thus prepared, the juice of this root is of a poisonous nature ; but, after it is dressed, not only the slaves, but even the best families, eat it as bread, to which they prefer it, although they have flour and corn sent annually from England in the storeships.

The families generally reside in the country ; but as soon as a ship arrives, they repair to St. James's valley, where most of them take in lodgers, who meet with excellent refreshments, and are regaled with abundance of animal and vegetable food, and some fruits, the produce of their farms. If one might judge from the variety of roots, such as carrots, turnips, potatoes, and greens, which are served up daily at their entertainments, he would naturally conclude, that, with a little pains, a sufficient quantity of this salutary part of diet might be raised, not only to supply the soldiers who reside here, but even a whole scorbutic fleet.

Al-

Although the gentlemen, who can afford to live on shore meet with such proper refreshments, after a long sea-voyage, yet this, is not the case of the common sailors ; for, unless half rotten with the scurvy, and sent ashore upon sick quarters, no other vegetable can be procured for them, but at an exorbitant charge, except purslin, which is gathered by the boys from the rocks, and of which they have a scanty allowance in their soup. The want of proper refreshments at this island may be considered as the only cause why seamen are so often afflicted with the scurvy in the short passage to England ; nor can any other reason be assigned why the soldiers who reside on this salutary island, are subject to the same disease.

This scarcity of vegetables, in my opinion, might easily be remedied, by setting apart a sufficient quantity of the company's land, for the cultivation of greens and roots ; for certainly, with the same care and industry, these lands would produce as good pot-herbs, turnips, carrots, potatoes,

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potatoes, and pumkins as any of the farms of the planters, who are only studious to raise a sufficient quantity for themselves and guests. If such a humane scheme as this was adopted, St. Helena would be inferior to no place in the world for refreshments. Vegetables would be produced in abundance, not only to supply the garrison, but would be procured at a rate sufficiently moderate to become an article of every ship's allowance while at this island.

During the first week of November, the weather was pleasant, and the south-east trade steady. From the 18th till the 20th, being near the equator, the weather was sultry and rainy, and the winds variable, with frequent calms. Till the end of the month, there was a fresh north-east trade, with agreeable temperate weather.

Rainy days, 12, 13, 15, 16, 17, 18, 19, 20, 29, . . .

Lat. day 1, 11 deg. 50 min. S. 10 day, 2 deg. 25 min. N. 20 day, 8 deg. 46 min. N. 30 day, 21 deg. 27 min. N.

The

This month several of our people were attacked with fevers, which only seemed to be symptomatic from bile, as the disease soon disappeared by cleansing the primæ viæ. In two cases, however, the disease was accompanied with symptoms of putrefaction, and the fever run out to the 12th or 13th day.

During the first ten days of December, the weather was delightful and temperate, and continued so till near the 20th, with some intermediate days of calm.—From this to the end of the month, it was cloudy, hazy, and cold.

Towards the end of the month, three of our people were confined below by the scurvy, attended with the usual symptoms, and many seemed to have a tendency to relapse.

Rainy, 2, 8, · 11, 14, 17, · 18, 19, · · 21, 22, 23, · · 27, 29, ·

Lat. day 10, 26 deg. 46 min. N. 20 day, 36 deg. 31 min. N. 31 day, 49 deg. N.

January, 1770, was a cold disagreeable month, the winds were north-easterly,

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accompanied with snow and fleet. On the 21st, the wind shifted to the westward, and the weather became more temperate.

On the 5th, at night, we made Scilly, but, by contrary winds, were detained in the Channel. On the 16th, we arrived in the Downs, which put an end to our tedious and disagreeable voyage.

The diseases of our seamen this month were coughs and colds; four had ulcerated fore throats; some were afflicted with the rheumatism; and two had swelled testicles, independent of any venereal taint.

The treatment of these cases did not differ from the common practice, only it is to be remarked, that it was unnecessary to make copious evacuations; and even when blood was drawn for a peripneumonic symptom, a few ounces, though it gave relief, greatly enfeebled the patient.

C H A P. II.

*A general Account of the Country, Air,
and prevailing Diseases, in different Parts
of the East Indies.*

HAVING, in the first chapter, made some observations upon the weather and the diseases, which most frequently occur in voyages to the East Indies, I shall now proceed to give a general account of the situations, changes of the weather and other circumstances which produce land diseases.

I shall begin with taking a cursory survey of the coasts of Malabar and Coromandel ; then passing to Bengal, I shall proceed to the eastern coast, from Aracan to the streights of Malacca, and islands adjacent ; and lastly end with the port of Canton, which is now the only part of the Chinese empire frequented by Europeans.

S E C T.

S E C T I.

The Coasts of Malabar and Coromandel.

CAPE Comorin lies in about 7 deg. 56 min. N. Near the shore, the land is low and covered with trees ; but at a little distance from the sea a chain of high mountains take their rise, and extending northward, divide the coast of Malabar from that of Coromandel. These are usually called the Gatta or Balagate mountains. The difference of the seasons, which are exactly opposite on the two coasts, depends entirely on the intervention of these high mountains, the coast of Malabar enjoying dry serene weather, while the opposite coast is drenched in rain.

The first settlement on the Malabar coast of any note, belonging to the English, is Anjanga. Near the shore, the land is low and woody, and the water bad.

Cocheen, belonging to the Dutch, stands low, and is situated on the banks
of

of a river. In the wet season, as torrents of rain descend from the mountains, all the water is thick and muddy. It is supposed that the monstrous swelled legs, to which the natives are subject, so well known over all India by the name of Cocheen legs, are occasioned by the impurities of these waters. However this may be, from the longest residence, no European becomes liable to the same disease. It cannot, indeed, be properly termed a disease; for the natives of Cocheen are extremely healthy, neither is the bulk of their legs the least inconvenience to them. No præternatural weight is to be observed; they are strong-bodied, and enjoy as much agility, as if they were totally exempt from this unseemly deformity.

From Cocheen to Calicut, where the English have a factory, the coast is beautifully diversified with rising hills and mountains. Tillicherry, a town and fort, belonging to the English, lying in 11 deg. 50 min. north latitude, is finely situated, abounds with refreshments, and is ex-

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tremely

tremely healthy. The island and city of Goa, the capital of the Portuguese, is likewise tolerably healthy.

The island of Bombay, lying in 19 deg. north latitude, of itself is barren ; and the Gentoos on the continent, believing in the metempsychosis, from a principle of religion, allow none of their cattle to be slaughtered ; however, they are abundantly supplied with provisions from Surat. This small island is very populous ; the natives from the continent flock under the English government, where their liberties are more secure. The town and fort, which are situated on the south-east of the island, stand dry, and, from the improvements which have already been made, it may be esteemed amongst the number of our healthiest settlements. The last place I shall mention is Surat ; the city, which is situated about fifteen or sixteen miles up the country, is large, spacious, and pretty healthful.

The whole coast is temperate and healthy, when compared with many of our settlements in India. It enjoys cool
re-

refreshing land and sea breezes upwards of six months in the year, which generally begin in October and continue till the end of March; but as soon as the south-west monsoon sets in, which happens in April, these breezes become uncertain, and, for the most part, disappear. The dry season, on this coast, is from October to April, and the rainy season in the opposite months.

In the wet season, Europeans are subject to fevers and fluxes: the last is the most frequent distemper, which, however, is never so fatal as at Bengal, Batavia, and other unhealthy places in the East Indies. The colera is also a very frequent disease at Bombay; and on this coast the barbiers is more common than in any other part of India. This disease is a species of palsy, affecting the limbs, and frequently the organs of speech, with inability of motion. This disease is brought on by expositions to the cold land winds in January and February. It is very obstinate, and seldom removed till a return of the warm weather; but the few

Europeans, whom I saw ill of it, were easily cured by a change of climate and sea voyage, without having recourse to any medicine.

We shall now proceed to the eastern coast of this peninsula, usually called Coromandel.

The southern part of this coast is little frequented till we arrive at the pleasant Dutch settlement at Negapatnam, lying in 11 deg. 10 min. north latitude, and abounding with refreshments of all sorts. A little farther up is the Danish settlement of Trincobar.

The first settlement which the English had was Fort St. David's, now in ruins; but they reside at Cudalore, a pleasant village, lying about three miles to the southward of the fort.

Madras is our only presidency on this coast. The fort is strong, the houses of the residents well built and airy. A pleasant village, called the Black Town, lies to the northward about a mile, and is promiscuously inhabited by the English, Gentoo merchants, and Banians. This
village

village is populous and healthy; all the country around is dry, flat, and pleasant, till we arrive near St. Thomas's Mount, eight miles from Madras, where the residents are continually making parties of pleasure, which greatly contributes to their health, the air here being particularly pure and salutary.

The French, English, and Dutch have factories at Massulapatam; but the pleasant and healthy settlement of Visacapatam belongs entirely to the English.

The soil on this coast, near the shores, is dry and sandy; but more inland, the country is diversified with hills and verdant pastures; and I have been informed by a gentleman in India, who had travelled all over the Carnatic, that the whole tract of country is, in general, remarkably pleasant and fertile; and that, even in the warmest months, the air is so salutary, that an exposition to the sun, fowling, and athletic exercises are attended with no inconveniency to health; however, at Madras, the excessive heat renders such amusements impracticable in the heat of the day.

On this coast, the temperature of the air is various at different seasons of the year. In January, February, and March, the weather is very temperate, and generally fair; but in May, June, and July, becomes insupportably sultry, owing to the land winds passing over long tracts of sand. These winds often blow with such violence that the air is obscured with dust; however, these hurricanes are of short duration, and always disappear with the rains in October.

The land winds generally blow from midnight till noon, and are succeeded by refreshing sea breezes, which continue till nine or ten at night, and frequently the whole night. By this means, the effects of a hot air are prevented, which, if constant for any length of time, would produce baneful complaints; besides, these hot suffocating land winds are not always constant, but the refreshing sea breezes seldom fail to return regularly during the hot months.

The north-east monsoon, which, on this coast, ushers in the wet season, begins

in October and continues till March, but the rains seldom last longer than December. As there is no evaporations in consequence of the rains, which are absorbed almost as soon as they fall; the country being dry, and there being no marshes of any extent, the wet season is the most healthy period in the year.

From this account it will appear, that this coast must be particularly salutary; and, indeed, the residents enjoy good health. The only diseases to which they seem to be particularly subject are great secretions of bile, accompanied with nausea, sickness at stomach, and sometimes a purging. The people at Madras are so well acquainted with this complaint, that they are generally their own physicians; and, in the warm months, it is no uncommon thing to see a patient one hour vomiting abundance of gall, and the next hour taking a ride into the country. This disease is in general so mild with them, that it seldom requires any other cure than the exhibition of a gentle puke.

However, the same diseases are attended with more violent symptoms amongst those who are not accustomed to the climate. In the year 1771, in the end of July and beginning of August, these bilious disorders raged more universally than usual amongst the seamen who came off long voyages, and began with the following symptoms. The disease was ushered in with sickness at stomach, vomiting, and purging of gall; in some, the stools were large and copious, without gripes; others were tormented with excruciating pains in the bowels, continual inclination to stool, with fruitless straining; others were seized with all the symptoms of dry belly-ach, vomiting, stricture about the navel, and great constipation; and, in some, the disease was attended with colera.

On the second day after these diseases made their appearance, ten of our people were affected; and in a fortnight, they went through above one third of the ship's company, and raged as universally amongst the other ships lying at Madras,

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as also amongst the new comers who lived on shore.

Amongst Europeans who undergo much fatigue, and particularly amongst the military, the hepatitis, swellings and obstructions of the liver, are very frequent diseases, and a number of the soldiers are annually carried off by fevers and fluxes. Although the coast of Coromandel is by far the most healthy of all our settlements in India, yet the diseases which occur there, do not differ from those of the more unhealthy situations, but by their being milder in their nature, and seldom epidemic.

We may likewise observe, even on this healthful coast, that the fair sex, enjoying, indeed, a remarkable immunity from the endemic and popular diseases of a warm climate, are, however, subject to many inconveniencies after a very short residence; the lively bloom and ruddy complexions they bring from Europe are soon converted into a languid paleness; they become supine and enervated, and suffer many circumstances of ill health
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peculiar to the sex, from mere heat of climate and relaxation of system ; however, parturition is not attended with such great danger here as at Bengal, neither is the puerperal fever of such a putrid nature.

The southern parts of India are subject to very great heats, which would be insupportable, if it was not for the periodical returns of wind and rain. As the variations of the seasons, in this part of the world, depend upon the monsoons, a term we have such frequent occasion to use, before we proceed any farther, it may be proper to give an explanation of it.

On the southern coasts of Asia, from Arabia to China, the winds are periodical, blowing in one direction one half of the year, and in the direct opposite during the other ; these winds, by sailors, are called monsoons ; and the regularity of their direction seems to depend on the annual motion of the sun. When the sun's declination is north, betwixt March and September, the monsoons, or periodical

riodical winds, are westerly; and, as soon as his declination is south, betwixt September and March, the monsoon shifts, and blows easterly during these six months. On the coasts, as well as over all the Arabian, Indian, and Chinese seas, the periodical winds are invariably regular, the south-west monsoon blowing from April to March, and the south-east monsoon in the opposite months; but inland, on the continent, great variations take place, owing to the soil and other dispositions, which alter the course of these winds*.

The south-west monsoon brings the rainy season with it in every part of India, except on the coast of Coromandel, owing to the opposition of the high mountains of the Balagate. On this coast, the wet weather happens in the north-east monsoon, which every where else blows clear and fair.

* For a more particular account, vide *Philosoph. Transact.*

At the time of the shifting of the monsoons, a great change in the weather takes place ; the sky generally becomes dark, cloudy, and boisterous, and torrents of rain descend, accompanied with thunder and lightning. At Bengal, and in China, the violence of these storms is such as to render all navigation extremely dangerous on these coasts. On shore, trees are torn up by the roots, and great damage done to houses.—Such tremendous storms as these happen frequently in warm climates, about the equinoxes ; in the West Indies, they are called hurricanes ; in the East Indies, the breaking up of the monsoons ; and in the Chinese seas, perhaps from their greater violence, they are distinguished by the name of a typhoon.

S E C T.

S E C T. II.

*Bengal, the eastern Coast as far as Malacca,
and Islands adjacent.*

THE extensive kingdom of Bengal passes through several latitudes ; in many places the soil is rich, the air serene and temperate, and the country delightful ; but in the province lying on the mouths of the Ganges, the soil is marshy, the country flat, and covered with wood. Owing to these circumstances, the natives, and still more the Europeans, enjoy various degrees of health.

Calcutta, the chief settlement and capital of the English, is populous and extensive, and is situated above a hundred miles up the river of Bengal. The houses of the residents are spacious and beautiful, and made as cool as art can invent, the apartments being large and lofty, and almost every house having a portico of the extent of the front, supported on columns. In some of the best houses, this gallery is continued quite round the building,

building, and is always of the same height. Such a construction is not only highly ornamental, exhibiting the appearance of splendid palaces, but is very salutary, on account of the free admission of air. Betwixt the columns of the portico, canvas hangings are fixed, which may be occasionally moistened with water; by this means, at any time, the suffocating air may be rendered, in some measure, cool. The rest of the city is inhabited by Portuguese, Armenians, Banians, and black merchants; but the most considerable part of the natives live in streets or squares, (usually called compounds) their habitations only consisting of small huts, closely situated, and only defended from the inclemency of the weather by mats.

The new fort is about a mile down the river, and stands on flat marshy ground. The barracks are roomy cool and elegant, and the whole is surrounded by strong fortifications. The land about this place is cleared for many miles; but, from its low situation, is very damp and wet in the rainy season. About three miles south
from

from Calcutta, there is a large collection of water, usually called the Salt-water Lake, which has a communication with the sea. This lake extends many miles up the country, and joining with other branches of the Ganges, it overflows in the rainy season. The sides of this large pool of water are very swampy, and in many places it forms fens, overgrown with sedges and reeds. As soon as the rains are over, the lake subsides, and leaves on the ground abundance of mud, slime, prawns, and other fish, which soon putrify with the heat of the season, and occasion very noxious exhalations. The land to the northward does not afford a more favourable prospect, being low, swampy, and fit only for the cultivation of rice. The whole country, as far as our view can extend, appears flat, and no hills nor mountains are to be seen.

From Calcutta to Culpee, the most usual station of our ships, the beach is muddy, the tides run high, and on each side of the river, the land is uncultivated, and so much overgrown with trees, shrubs,

shrubs, and long grass, that it is one continued thicket, affording convenient haunts for tygers and other wild animals. Several creeks here and there run off from the river; and some country villages, the residence of the natives, are situated upon its banks, the most desirable and healthful of which is Fulter, where the Dutch ships are stationed.

The village of Culpee is situated about a mile up a creek, in low marshy ground. The beach here, as well as the creek, is very muddy and slimy at low water; the land on each side is uncultivated and wet, and overgrown with impenetrable shrubs and long grass; the whole country around, for a considerable extent, has the same unfavourable aspect, and in the rainy season is converted into a pool of stagnant water. In short, there is not in the whole world a more unhealthy situation than Culpee.

The remaining station for ships that trade to Bengal, are Cogeree and Ingelee. The first of these is a village situated on a wide extended plain, tolerably dry, and
free

free from underwood, and may be reckoned healthy when compared with the unfavourable place we have just now described. In the year 1768, although the Dutch ships which lay at this village were not totally exempted from the general sickness of the season, yet diseases were attended with no great mortality amongst their seamen.—Ingelee is tolerably situated, the ships lie more out at sea; and the sickly season being over before they drop down here to take in the remainder of the cargo for Europe, the seamen of all nations enjoy good health; and those who have been weakened by preceding sickness recover sooner than at any of the places we have mentioned.

The rainy season at Bengal begins in June, and continues till October. During that time, scarcely a single day passes without deluges of rain, accompanied with thunder and lightning. In August and September, the air is moist, intolerably sultry, and stifling, with seldom an intervening breeze; for there is not here,

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as in other parts of India, a regular succession of land and sea winds.

The dry and hot season is from April till June ; but particularly in the two last months, the air is sultry, and the winds hot, and there are few or no showers fall, unless accompanied with storms, at which time there are torrents of rain, which cool the air ; and it is observed by all who reside at Bengal, that if these storms are frequent, they render this period healthy ; so that, even in this unwholesome country, the rains, which do not overflow the grounds and become stagnant, are conducive to health, and prevent diseases.

The cold season is from the end of November till March ; and there is not in the whole world a more delightful place than Calcutta during these months.

It is not at all surprising that the situations we have mentioned should be annually visited with fatal and destructive diseases ; for, independent of great heat, this would be the case in any other flat and marshy country.

As

As I had an opportunity of seeing the epidemic diseases which raged here in 1768-9, in all their different forms, I shall just mention the prevailing diseases through the different periods of the year, leaving the detail of symptoms and method of cure to another place*.

The putrid remittent fever and dysenteries are the fatal and prevailing complaints of the wet months, which begin in August and continue till November. During the beginning of the epidemic, the fever is attended with the greatest danger and malignity; it frequently carries off the patients in twelve hours, and, if it is not put a stop to, generally proves fatal on the third or fourth day. In August, the remissions are very imperceptible; in October, they become more distinct; and, as the cold weather comes on, they differ in nothing from regular intermittents. At that time too, the putrid dysentery begins to rage along with the fever. At the beginning, it is im-

* Vide Part II. Chap. ii.

possible to distinguish the two diseases, which are frequently combined ; and, what is still worse, it often happens, when the fever is removed, and the patient in a convalescent state, he falls into the dysentery ; his strength and spirits being sunk, after lingering out sometimes a few days, and sometimes weeks, death closes the scene, and puts an end to his miserable existence. Both the fever and flux, if obstinate, have an equal tendency to terminate in abdominal obstructions, particularly in fatal swellings, and suppurations of the liver.

These diseases were very frequent and fatal to many Europeans, particularly to the new comers in the year 1768 ; but I am informed, that, in the year 1770, being accompanied with a scarcity of rice, it was computed, that above eighty thousand natives, and one thousand five hundred Europeans, died at Bengal. The streets were crouded with funerals, the river floated with dead carcases, and every place exhibited the most melancholy scenes

scenes of disease and death*. During the sickly seasons at Bengal, the uncertainty of life is so great; that it frequently happens that one may leave a friend at night in perfect health, who shall not survive the following day. There have been several melancholy instances of persons who have returned home in a state of perfect health from performing the last duties to a deceased friend, and have next day been numbered with the dead. The cool agreeable season, from December to March, is productive of no disease. The complaints to be met with are few, and are in general the consequence or remains of the diseases of the former period. The diseases which the Europeans are subject to in the dry months are the colera and diarrhœa. Fluxes and fevers are seldom epidemic;

* It has been a religious custom of the natives, from time immemorial, to bury their dead in the river Ganges. The deceased, as soon as their breath is out, are carried below high-water mark, and suffered to lie there till the approach of the tides carry them off.

and when they do happen, are not attended with much danger.

Charnagore and Chinsura, the French and Dutch settlements, on the opposite side of the river Ganges, being situated farther up the country, where the soil is better and free from marshes, are tolerably healthy, even during the rainy seasons; and when the same diseases happen, they are neither so universal, nor are they attended with so great malignity. I now proceed to take a survey of the eastern coast of the Bay of Bengal,

From the mouth of the Ganges to Chatigan, the coast, which may be considered as a chain of small islands, is very low. Chatigan is a subordinate factory belonging to the English. It is healthier than Calcutta; however, all Europeans residing on the coast of Aracan are subject to fevers and fluxes, which are more frequent during and after the rains.

The coasts of Pegu and Tenasserim are only frequented by country vessels, the trade consisting of tutenague, which they carry to the different parts of India. The

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mortality, which frequently happens among the European officers who trade there, shews the climate to be very unhealthy. The rains and sickly season happen in the same months as at Bengal, and the diseases are of the same class, and attended with an equal degree of malignity.

The islands of the Negrais, lying near the coasts of Pegu, are low, and in many places covered with woods, from which arise great exhalations. The East-India company lately endeavoured to make a settlement here, but were prevented by the natives; which, in all probability, has saved the lives of many Europeans, who would undoubtedly have fallen a sacrifice to the insalubrity of the climate.

The Malay coast is but little known. In coasting along, the aspect of the country is very unfavourable; it appears low, woody, and uncultivated.

The Dutch settlement of Malacca, situated on the extremity of this peninsula, lying in 2 deg. 12 min. N. is pleasant and healthy. The situation of the

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town,

town, and particularly of the fort, is elevated. The lands near the town, agreeable to the known industry of this nation, are well cultivated, and the country around interspersed with rising hills and mountains. The air is not excessively hot, being refreshed almost every day with land and sea breezes and pleasant showers. Here the residents enjoy uninterrupted health and sound constitutions; and, from the accounts of all the English ships who have wintered here, we may include it amongst the number of the most healthy European settlements in India. The same character cannot be given of the opposite coasts of the Streights of Malacca, where the lands of Sumatra are low, swampy, and uncultivated. In passing these streights, in September, 1771, in a voyage to China, the weather was close and sultry, the nights moist and suffocating, with heavy fogs; and much rain poured down in torrents, attended with thunder and lightning. By the 20th of the month, above twenty-four of our men were afflicted with putrid remittents
and

and fluxes. It is beyond all doubt, that these diseases were occasioned by the humidity of the weather and exhalations from the land; for as soon as we got out to sea, and were out of reach of the noxious exhalations from the Sumatra shore, and the other islands, and had the ship thoroughly purified, the disease became milder, and a stop was put to the dysenteric infection, which was becoming general. All our people arrived in good health at the port of Canton, on the 25th of October, where even the weakest recovered in a few days.*

The islands of Java and southern parts of Sumatra are very unhealthy. From November till May is their rainy season. During these months, the heat, humidity, and evaporations from the marshes are very great; and from sultry weather, I have been told, it frequently changes into chilly cold. The fatal diseases, in these months, are putrid remittents, and sometimes continued fevers and malignant

* For a more particular account of the weather, vide Meteorological Register for September,

fluxes.

fluxes. Other parts of Sumatra lying immediately under the line, are continually subject to rain, and the ground near the shore is low and covered thick with trees and underwood. The heat being intense, stinking fogs arise, which corrupt the air, and render this country fatal to foreigners. Even in the more elevated and hilly coasts, on the south-west of the island, which, at a distance, exhibits a more favourable situation, the low grounds are covered with impenetrable woods and long grafs. The land of North Island, which lies on this coast, near the beginning of the Streights of Sunda, appears, at a distance, finely variegated; but, at the place where the wood and water is to be got, it is low and covered with impenetrable mangroves, and infested with a variety of insects, ants, and blood-sucking gnats. It is here that most of the East-India ships wood for their homeward voyage. A Danish ship, in 1768, anchored at this island, and sent twelve of their people on shore to fill water, where they only remained two nights,

nights ; every one of them were seized with a fever, of which none of them recovered ; and although the ship went out to sea, and the sick were not removed from the rest of the people, none, except the twelve who slept on shore, were attacked with the complaint. From such melancholy instances as this, which frequently happen in other parts of India, it is to be hoped, that the commander of every ship will beware of allowing the people to sleep on shore, in such unwholesome unperflated places. The improvements which are every day taking place at Bencoolen will soon render that settlement healthy. The residents there having totally relinquished the old town, which was wet and low, and residing at Fort Marlborough, on a drier and more elevated situation, are not so subject to sickness in the rainy months, and the diseases which appear are of a much milder nature. Upon the whole, the insalubrity of this island seems to be owing to want of culture. In many places the soil is luxuriant, and in particular

ticular on the north-east end, the country is diversified with high grounds, rising hills, and mountains.

The uncultivated parts of the large island of Borneo is subject to the same intemperature of climate as Sumatra; and this too is the case of the Celebes, the Molucca, or Spice Islands.

The Spanish settlement of Manilla, on the island of Luconia, which is the chief of all the Philippines, has its unhealthy seasons. The land for many miles round this beautiful city is low. In June and July, the humidity of the air is great, and the heat of the sun is intense, which raises noxious exhalations. In these months, fevers and fluxes are frequent, some years carrying off a great number of the inhabitants; however, no country in the world is more agreeable during the rest of the year; the climate is temperate; the fields are covered with perpetual verdure, and produce all the varieties of tropical fruits.

[S E C T. III.]

China and Maccao.

THE whole empire of China is extremely delightful, the soil is rich, the air pure, and the industry of the inhabitants astonishing. As it produces every luxury and necessary of life, it is justly esteemed one of the most fertile countries in the world. As the Chinese admit of polygamy, prohibit emigration, and seldom or never engage in war, their empire is extremely populous. Every river maintains a proportion of inhabitants adequate to the land, whole families living continually in boats, without having any other place of residence. Their number of people lays them under the necessity of carrying industry to the greatest height, for otherwise their country, fertile as it naturally is, would be insufficient to maintain the inhabitants. Every inch of land is cultivated; no forests, nor woods, nor even a single tree, is suffered to obstruct the labours of the husbandman. Canals
are

are cut out every where to water the fields ; and from the canals are reservoirs of water ; and marshes are manured for the cultivation of rice. By this means, health and plenty are the portion of its inhabitants through all the seasons of the year. The only terrible and fatal diseases to which they seem to be subject are the small-pox and leprosy, two of the most nauseous distempers which afflict the human race ; but, as it is not my intention to dwell upon the diseases of the natives, a subject to which, perhaps, no European will ever be equal, I shall confine my observations to the port of Canton, the only part in the Chinese empire frequented by the Europeans ; and even here the severe policy of this nation renders any account of the situation very imperfect.

The usual station of all European ships in Canton river is at Wampoa, a village, situated about fourteen or sixteen miles below the city of Canton. On one side, the land is low, marshy, and covered with water, fit only for the cultivation of rice. The extent of these swamps are

considerable ; the tides rise very high and overflow great part of them ; but the intersection of the river renders the rice lands more pure than they would otherwise be, and consequently the air is much healthier than one could well expect from the unfavourable aspect.

On the opposite side, the French and Danes Islands are formed by the intersection of this large river. The land on Danes Island is high, and affords an excellent prospect of the country around, which consists of a variety of other islands agreeably diversified with rising hills, pleasant verdant valleys, with numbers of fine villages.

The city of Canton is built on a wide extended plain, and is very large and populous. Here the government allow the English, Dutch, French, Danes, and Swedes, separate factories on the banks of the river. The city, though paved, is very wet in rainy weather, and the water makes its way under the factories of the different nations every tide. The houses are built of bricks ; the apartments
are

are in general small and not very lofty; and the ground stories are very damp. When the business of the season is over, the supercargoes remove to Maccao, a Portuguese island, subject to the Chinese government. The city of Maccao is situated on a rising ground; the whole island is dry, rocky, and barren; they are, however, plentifully supplied with provisions by the Chinese; and though the air is very sultry, yet it is tolerably healthy.

The heat of the places just mentioned, as well as of all the southern parts of China, is excessive during the summer months, particularly in June, July, and August. In September and October, the weather is still sultry in the day-time, but cold and chilly, with north-easterly winds, at nights. December, January, and February are the cold months; and during this time the vicissitudes of the weather are more quick than in any other part of the world. When the winds are northerly, the weather is cold, and the thermometer at 46 deg. and upon a change

change of the wind to the south, it is next day up at 60 or 70. People who reside here are always at a loss, with regard to their clothing, one day finding a silk coat sufficient, and the next, upon a sudden change of the wind, finding it necessary to wear a flannel waistcoat.

In July and August, the climate is excessively sultry; and the seamen living at Wampoa are subject to dangerous remittent or continued fevers, which are no ways different from the epidemics of other warm climates. In November, these fevers change into regular intermittents, which admit of an easy cure by the cortex, and are seldom or never attended with great danger. During the above period fluxes are frequent, and seem to be the most prevailing endemic; and although they are not so fatal here as at Bengal, yet if they are neglected at first, they are frequently dangerous, and always very troublesome, often baffling the power of every medicine, till such time as a change of climate is produced by setting out to sea. In 1771, when

twenty-seven European ships were stationed at Wampoa, these diseases were very universal, and carried off numbers. In November, about a third of our people laboured under double tertians, regular agues, and the dysentery. The same diseases prevailed equally in the other ships; and unless the bark was given early in the fevers, and timely evacuation made in the flux, there was little chance of the patient's recovery. The fever and flux were frequently combined, and often changed into one another. In some cases which I have seen, where the patients were neglected at first, the diseases proved fatal as early as the sixth day; and in others, where the period was longer, the greatest symptoms of putrefaction appeared.

Upon the whole, the port of Canton, is by no means so healthy as it is generally represented. The comparative degrees of health which Europeans enjoy here has been ascertained from the instances of the supercargoes, which is, however, a very erroneous standard. The generous and regular way in which these gentlemen

men live, for the most part, exempts them from diseases, and being but few in number, no great mortality can take place amongst them ; but seamen, who never observe much regularity in their way of living, who work hard in the day-time, are but badly clothed, and not provided against the damps and cold north-easterly winds at nights, seldom fail to be afflicted with the diseases already mentioned.—Even the factors of the different nations who, reside here for any considerable time, experience all the inconveniencies peculiar to every sultry climate ; florid health is a stranger to their countenances ; their constitutions are soon weakened and enfeebled ; and they become subject to habitual fluxes and other complaints, the usual consequences of too great relaxation. But from this I would not mean to infer that China is peculiarly fatal to Europeans ; on the contrary, there are many circumstances which render it more salutary than most of the settlements in India. The usual provisions and refreshments to

be met with here are much superior to what can be got in any of the ports of India, and are not exceeded even by England itself. The diseases, however, are of the same nature with those of other warm climates; and when many ships are at this place, they carry off numbers.

Having thus far given some account of the principal European settlements in the East Indies, we shall conclude the whole with a short remark upon the manner of living in this part of the world. The English live in much the same way as in their own country; and if they differ in any thing, it is in carrying luxury to a greater height. At Bengal, and on the Malabar and Coromandel coasts, there is plenty of rice, fruits, greens, and roots, flesh, and likewise in many parts abundance of fish; the poultry is good, the beef poor and very indifferent; and the seamen, who eat freely of it, are subject to the colera, and diarrhœa. The common bread, made of wheat-flour, is very good, and well fermented; the usual drink is arrack punch;
but

but amongst people of fashion, wine and water, cyder, and country beer * are the usual diluters of their meals. They are plentifully supplied with preserved fruits, pickles, and claret, from England, and they have in general all varieties of wine. A generous but moderate use of wine is conducive to health, and is useful in preventing diseases; and it is, indeed, generally observed all over India, that the people whose circumstances enable them to drink claret enjoy the greatest immunity from sickness. Great errors seem to be committed in eating luxurious meals of animal food, served up with pickles, rich sauces, and dressed in such a manner as to encourage too much ingurgitation; for it is remarkable, that in warm climates, so long as there is the least remains of health, in consequence of the evacua-

* Country beer is made by mixing one part Dorchester beer, or porter, with two or more parts of water, to which a little ginger and a sufficient quantity of sugar are added; by this means a very strong fermentation is renewed, and in a few hours the beer is very brisk and exceedingly palatable.

tions being more profuse, and the constitution demanding a greater supply, the appetite is encreased. Rice, vegetables, and spiceries are the common diet of the natives in all warm climates, China not excepted. In imitation of this, * cory and rice is a standing dish in all European families, which, though complicated, is, perhaps, the most salutary diet; for in this way a sufficient quantity of animal and vegetable food can be taken with safety to satisfy the most craving appetite.

C H A P. III.

Observations on the Degrees of Heat, in a Voyage to Madrafs and China, in the Year 1771, and in returning to England, in the Year 1772.

THE Talbot made another voyage to India, in the year 1771. The

* The principal ingredients of cory stuff is Chili pepper, other spiceries, and turmeric. Fowls, prawns, and other fish, are stewed in a proper quantity of this powder, to which a few shallots are added, and the whole agreeably soured with lime-juice. The stew is served up and eat with abundance of rice,

ship's

ship's company consisted of one hundred and seven men. There were sixteen passengers and seventy recruits for India. She left the Downs the 16th of February, and arrived at Madrafs the 25th of July. She sailed from Madrafs with her complement of men, the 23d of August, and anchored at Wampoa, in the river of Canton, the 25th of October. On the 7th of March, 1772, she sailed for England, and arrived in the Downs the 1st of September.

The diseases which occurred when in the different ports of India, also the epidemic complaints in the Streights of Malacca have been mentioned in their proper places. Those at sea were exactly the same as in the former voyage; our homeward passage, though tedious, was remarkably healthy, I shall only add an exact therinometrical diary, shewing the different degrees of heat during the voyage. I am the rather led to do this, as no register of the kind has ever yet been made public; it will shew also how little reason we have to expect inflammatory complaints in regions of the world where there are such long continued heats.

Before we proceed farther, it will be proper to observe, that, although the thermometer always shews the real heat of the air, yet the degree of heat denoted by it does not always correspond with that perceived by our sensations; which difference, in a great measure, depends upon the nature of the soil and purity of the air.—Thus, between the tropics, if the air happens to be calm, moist, and unperflated, even although the mercury in the thermometer may sink a degree or two, a much more stifling heat is felt than when it stood higher, while the air was clear, dry, and ventilated. Again, in the warmest weather which I have observed in any part of India, when the thermometer has stood at 90 deg. if there happened to be an agreeable breeze, the mind has been chearful and the constitution vigorous and alert; whereas in an unperflated and unelastic atmosphere, an insupportable and suffocating heat has been felt, which has occasioned the greatest debility and languor, when the thermometer never rose above 80 deg. The

truth of this fact may be observed every day in most warm climates. The same observation holds good in the contrary sensation of cold. Thus, in the higher latitudes of the Cape of Good Hope, in wet stormy weather, when the thermometer is, perhaps, but little below 60 deg. if the wind is at south-west, there is as great a sensation of cold felt as in England when the thermometer is only about 40 degrees.

The following observations were made with Farenheit's thermometer.—The mercury was contained in a cylinder, and not, as usual, in a globe or ball; and, upon trial, the points were found perfectly exact. The instrument was fixed on the inside of the round-house window, unless when the weather obliged them to be shut; then it was removed into the open gallery. The former situation was preferred, as the effects of the direct rays of the sun were better guarded against; but when both the situations were equally shaded, I never observed any material difference. The thermometer was never carried out of the ship; so that in estimating

ing the heat on shore, allowances are to be made. On account of the sandy soil and heat of the land-winds at Madras, it will be moderate enough to allow 6 or 7 degrees of greater heat than upon water, where the ships are anchored.

The force of the winds are denoted by cyphers ; 0, calms ; 1, light winds ; 2, pleasant gales ; 3, fresh gales ; 4, storms. The quantity of rain is denoted by dots ; slight showers or heavy falls of rain, in proportion to the number of dots. Thunder and lightning by the initial letters ; and where this mark ☉ occurs in the column, it is the degree of heat measured by the direct application of the sun's rays to the instrument. This experiment was not repeated unless in the hottest days, owing to the misfortune of breaking a small pocket-thermometer, and the inconvenience and danger of removing the large one. All the rest of the following tables will be understood from the marks at the top of each column.

METEOROLOGICAL REGISTER.

At London, in the hard Frost of 1771, the Thermometer being placed on the outside of a northern Window, stood at the following Degrees.

January.

Day.	Hour.	Deg.
15	8 a. m.	30
	9 a. m.	26
16	9 a. m.	30
	4 a. m.	31
17	9 a. m.	28
	4 a. m.	31

February, 1771.

Day.	Hour.	Therm.	Lat.	Winds.	Weather.
			N.		
21	11 a. m.	57	47 36	S W	3 Foggy
22	11 a. m.	58	47 26		4 Thick Fog
23	11 a. m.	59			2 Clear sunshine
24	11 a. m.	68			2 Sunshine
25	11 a. m.	58	45 55	W	4 Sunshine
26	11 a. m.	58		S W	3 Hazy
27	11 a. m.	61	44 55	W	2 Fair
28	11 a. m.	59	44 28	S W	3 Sunshine

76 *Meteorological Register, March, 1771.*

Day.	Hour.	Therm.	Lat. obf.	Long from Lond.	Winds.	Weather.
			N.	W.		
1	11	58	43 44	11 35	W b S 2	Sunshine
	3	59				
2	11	59	42 26	11 52	W N W 1	Cloudy .
	4	60				
3	11	60 $\frac{1}{2}$	40 46	12 20	N W 2	Clear
	4	63				
4	11	60	39 11	12 34	W b N 2	Clear
	4	63				
5	9	62	38 24	12 37	W b N 2	Cloudy .
	4	62 $\frac{1}{2}$				
6	9	62	37 8	12 9	NWbN 2	Cloudy
	4	62				
7	9	59	35 36	13 54	N 2	Cloudy . . T L
	4	61				
8	9	62	34 40	15 38	N 3	Cloudy . . .
	4	64				
9	9	64		15 2	W S W 2	Cloudy
	4	64				
10	9	64	32 9	14 27	S W 2	Sunshine
	12	72 ☉				
11	9	66	32 27	14 58	S 0	Sunshine
	12	81				
12	7	67	31 57	15 32	Variable 0	Sunshine
	4	70				
13	9	66	31 31	15 47	0	Cloudy
	4	67				
14	11	66	30 27	16 15	N N W 2	Cloudy
	5	65				
15	10	66	29 8	18 1	N E 2	Cloudy
	4	66				
16	9	66	27 43		N E 2	Cloudy
	4	66				
17	11	66	25 50	17 30	N E 2	Hazy
	4	70				
18	11	68	23 24	18 2	N E 2	Cloudy, L
	4	70				

Meteorological Register, March, 1771. 77

Day.	Hour.	Therm.	Lat. obs.	Long from Lond.	Winds.	Weather.
			N.	W.		
19	9	69	28 41	17 42	N E	2 Cloudy
	12	95 ☉				
20	10	71	17 42	18 8	N E	2 Hazy
	4	72				
21	9	72	15 31	18 8	N E	2 Clear
	4	74				
22	9	74	13 20	18 8	N E	2 Hazy
	4	75				
23	9	75	10 37	18 8	N E	2 Sunshine
	4	75				
24	9	77	10 37	18 8	N	1 Fair
	4	78				
25	10	79	9 34	18 8	N	1 Sunshine
	4	80				
26	11	81	6 34	18 11	N W	2 Hazy
	4	82				
27	11	82	5 24	18 12	N	1 Hazy
28	11	82		18 5	N	1 Fair
	4	84				
29	4	85	4 44	17 49	N b E	1 Hazy, at night T L...
30	4	82	4 21	17 45	N E	Hazy .
31	4	83		17 24	0	...

78 *Meteorological Register, April, 1771.*

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
			N.	W.		
1	8	82	1 56	17 26	Variable 0	Cloudy, at night . . .
	4	82				
2	11	84	1 19	17 26	Variable 1	Cloudy
3	11	83	42	17 53	Variable 0	Cloudy . .
4	11	80				
	4	81	30	18 4	Variable 1	Hazy
5	11	82	S.			
	5	83	7	18 54	S E 2	Hazy
6	11	81	1 19	19 40	S E 1	Fair
	12	92 ☉				
7	11	81	2 41	20 13	S E 2	Cloudy
	4	82				
8	11	82	3 47	20 45	S E 1	Cloudy
	4	83				
9	11	82	4 33	20 51	S E 1	Cloudy
	4	84				
10		84	6 3	21 9	S E 2	Hazy . . .
11		83	8 27	21 45	S E 2	Cloudy
12	11	82	9 45	21 49	S E 2	Hazy
	4	82				
13	11	81	11 1	22 17	S E 2	Clear
	4	81				
14	11	81	12 19	22 47	S E 2	Hazy .
	4	82				
15	11	81	13 33	23 17	S E 2	Fair
	4	82				
16	11	80	14 7	23 37	S E 2	Fair
	4	80				
17	8	79	14 15	23 55	S E 2	Cloudy .
	3	80				
18	8	80	14 28	24 13	S E 2	Cloudy
	3					
19	8	80	15 32	25 3	S E 2	Cloudy
20	8	80	17 12	25 47	S E 2	Cloudy
	3	81				
21	8	80	18 48	25 29	Variable	Cloudy

Meteorological Register, April, 1771. 79

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
			S.	W.		
22	8	80	20	3	25 14 S E 2	Cloudy
	3	81				
23	8	79			S E 2	Hazy
	3	79				
24	8	78	22	21	Variable 0	Cloudy
25	8	78	22	11	29 19 Variable 1	Rainy
26	8	78	23	16	29 6 E 1	Fair
27	8	78			Variable	
	3	76	24	38	28 28 E 2	Cloudy
28	8	78	25	28	27 23 E 2	Fair
29	8	77	26	9	26 43 E 1	Cloudy, ecl. of the moon
30	8	75	26	46	25 59 Variable 1	Fair
	3	76				

80 *Meteorological Register, May, 1771.*

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
			S.	W.		
1	8	72	27 59	24 38	Variable 2	Squally
	3	73				
2	8	69	28 45	23 22	E 4	
	3	69				
3	8	66		21 55	N N W	Continual small rain
	3	67				
4	8	66	29 56	29 25	S S W 3	Cloudy
	3	67				
5	8	65		18 35	S S W 1	Lowring
	3	66				
6	8	70		15 19	N W 3	Dark and cloudy
7	11	65	32 5	10 34	N b E 3	Cloudy .
8	11	66	32 12	7 41	S W 2	Cloudy and fair
9	11	64	31 31	5 40	S S E 2	Clear
10	11	69	30 25	4 41	S E 2	Fair
	3	66				
11	11	69	31 6	4 36	S W 1	Variable rain
12	11	66	31 39	2 48	S W 2	Cloudy
	5	62				
13	11	63	31 50	2	S 2	Squally
	4	63		E.		
14	11	64	32 28	52	Variable	Cloudy
15	11	62	34 0	3 50	N 3	Fair
	5	60				
16	11	63	35 15	7 52	N E 3	Fair
	5	63				
17	11	61	35 40	10 54	S 3	Fair
	6	58				
18	11	63	36 0	12 40	N 1	Fair
	5	61				
19	11	62	36 9	16 47	N 2	Hazy
	5	61				
20	11	64	35 39	19 48	N 2	Cloudy
	5	60				
21	11	63	35 9		Variable 1	Hazy. Saw the Cape
	5	61				

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
			S.	E.		
22	11	58	34 50	24 12	Variable	Rainy ..
	5	56				
23	8	59	34 47	25 50	Variable 0	Pleasant weather
	11	64				
24	11	66	35 10	28 31	W 2	Fair
	6	62				
25	11	65	34 37	30 3	Variable	Squally ..
	6	61				
26	11	64	35 29	29 41	S E 3	Fair
	6	62				
27	11	66	36 49	30 50	N E 2	Cloudy and squally
	5	65				
28	11	69	37 5	32 56	Variable 3	Squally
	5	68				
29	11	68	37 15	33 40	Variable	Unsettled and rainy ..
	5	66				
30	11	65	35 39	33 37	Variable 2	Lowring & rainy ... L
	4	64				
31	11	63	36 36	34 22	Variable 3	Rainy .. and squally
	4	62				

82 *Meteorological Register, June, 1771.*

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
			S.	E.		
1	11	64	35 24	36 15	S	3 Squally T L rainy . :
	5	63				
2	11	66		37 36	S	2 Cloudy . . .
	5	65				
3	11	66		39 15	N W	3 Fair
	5	64				
4	11	64	31 25	40 36	N W	3 . . . T L
5	11	69	29 38	41 55	W	2 Cloudy
	5	69				
6	11	70	28 35	42 34	W N W	2 Fair
	5	71				
7	11	71	28 6	43 56	N E	2 Fair
	5	70				
8	11	74	25 48		S W	2 Fair
	5	72				
9	11	80	26 47		E b S	3 Fair
	5	76				
10	11	81	26 45		N W	2 Fair
	5	74				
11	11	69	26 4		W S W	3 Cloudy
	5	68				
12	11	71	24 15		S S E	2 Cloudy
	5	70				
13	11	72	22 19		S S E	3 Fair
	5	74				
14	12	74	19 40		S S E	2 Fair
	5	75				
15	11	75	18 18		S S W	2 Fair
	5	76				
16	11	77	16 41		S S W	2 Fair
	5	78				
17	11	79	14 21		S S W	2 Fair
	5	80				
18	11	80	12 45		S S W	2 Cloudy
	5	80				

Meteorological Register, June, 1771. 83

Day.	Hour.	Therm.	Lat. obs.	Long from Lond.	Winds.	Weather.
19	11	85	S.	E.		
	5	85	At Jo-		S b E	1 Fair
20	11	87	hanna		S S W	1 Cloudy . .
	6	85				
21	11	89			S E	1 Fair
	6	84				
22	11	86	12	7		0 Fair
	5	80				1
23	11	80	10	24	43 47	S 2 Fair
	5	79				
24	11	80	8	21	43 55	S W 2 Fair, dews at night
25	11	80	6	12	44 6	S W 2 Cloudy, dews at night
	6	79				
26	11	79	4	31	44 14	S S E 2 Clear, dews at night
	5	79				
27	11	80	2	39	45 17	S S W 2 Fair, dews at night
	6	76				
28	12	79	0	44	46 56	S W 2 Cloudy, dews at night
	6	78	N.			
29	12	81	1	4	48 25	S W 3 Hazy
	6	79				
30	12	81				
	3	83	2	26	50 48	S S W 3 Fair
	6	79				

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
			N.	E.		
1	12	82	3 29	53 15	W S W 3	Cloudy
	6	81				
2	12	83	4 34	56 12	SWbW 3	Hazy ...
	6	82				
3	12	85	5 23	58 32	SWbW 3	Cloudy
	6	83				
4	12	85	5 55	60 44	W S W 2	Fair
	6	84				
5	12	84	6 14	62 23	W b S 2	Fair
6	12	85	6 43	64 0	W b S 2	Squally ..
	6	83				
7	12	86	7 11	65 44	W b S 2	Cloudy ..
	3	88				
8	12	87	7 23	67 6	S W 2	Cloudy.
	3	88				
9	12	87	7 47	68 46	SWbW 2	Cloudy
	3	88				
10	12	86	8 10	70 44	SWbW 2	Squally ...
	3	88				
11	12	86	8 12	72 22	W S W 2	Fair
	3	87				
12	12	87	7 23	74 0	S W 2	Cloudy
	3	89				
13	12	86	6 36	75 45	W 2	Cloudy ..
	6	84				
14	12	85	5 47	77 43	W N W 2	Fair
	3	88				
15	12	86	6 24		W 2	Fair
	3	87				
16	12	89	7 8		S b W 1	Fair
	3	80				
17	12	87	7 12		N b W 1	Cloudy
	6	85				
18	12	87	7 3		S E 1	Fair
	6	85				

Meteorological Register, July, 1771. 85

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
			N.	E.		
19	12	89	8 35		W S W 1	Cloudy
20	12	92				
	6	86	9 29			o Fair
21	12	88				
	6	86	10 36		S W 1	Cloudy .
22	12	88	11 23		S E b S 1	Fair
23	12	90				
	6	98	12 7		E 1	Cloudy
24	12	30				
	6	96	12 36		E 2	Fair
25	12	88	AtMa	80 32		
26	12	90	drafs		E 2	Squally . . . T L
	3	93				
27	12	90			S 2	Cloudy, T L
	3	93				
28	12	90			S 2	T L
	3	92				
29	12	93			S 2	Sea and land breezes
	4	96				
30	12	90			S 3	Fair, sea and land br.
	4	94				
31	12	91			S 3	Cloudy, sea and land br.
	4	93				

86 *Meteorological Register, August, 1771.*

Day.	Hour.	Therm.	Lat. obf.	Long from Lond.	Winds.	Weather.
1	12	93	At Ma dras		land&sea 1	Cloudy, rainy .
	4	94				
2	12	92			land&sea 1	Rainy . .
	4	90				
3	12	90			land&sea 2	Fair
	3	91				
4	12	90			land 1	Cloudy
	4	92				
5	12	92			land 1	Rainy . .
	4	94				
6	12	89			land&sea 1	Fair
7	12	90			land&sea 1	Fair
	5	92				
8	12	93			land&sea 2	Rainy, T L
	7	96				
9	12	89			land&sea 2	Cloudy . .
	4	87				
10	12	93			land&sea 2	Rainy .
	4	88				
11	2	94			land 1	Rainy . .
	4	89				
12	12	93			land&sea 1	Fair
	4	90				
13	12	90			land&sea 3	Fair
	4	87				
14	12	89			land&sea 2	Fair
15	12	89			land&sea 1	Rainy .
	3	90				
16	12	90			land 2	Squally, rainy . .
	4	94				
17	12	94			land 2	Squally, rainy . . .
18	12	93			land 1	Fair
19	12	90			S 3	Rainy
	4	87				
20	8	90			land&sea 2	Fair
	3	94				
21	8	92			land&sea 1	Fair
	2	95				

Meteorological Register, August, 1771. 87

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
			N.	E.		
22	11	94			S W	2 Cloudy
	4	87				
23	10	86	10 58	81 48	S E	2 Fair
	3	88				
24	10	85	10 0	83 20	E	2 Fair
	3	87				
25	10	85	8 52	85 18	S W	1 Cloudy
	3	87				
26	10	86	7 32	87 14	S W	2 Fair
	3	89				
27	10	85	6 41	89 4	S W	2 Hazy
	3	87				
28	10	85	6 19	90 44	S W	1 Hazy
	12	88				
	6	90				
29	8	85	6 7	92 3	W	1 Cloudy
	3	89				
30	8	85	6 1		W	2 Cloudy :
	3	88				
31	8	87	5 38		W	1 Cloudy
	3	90				

88 *Meteorological Register, September, 1771.*

Day.	Hour.	Therm.	Lat. obs.	Long from Lond.	Winds.	Weather.
			N.	E.		
1	8	87	5 47		0	Hazy
	3	93				
2	8	85	4 48		Variable 1	Cloudy
	3	92				
3	8	85	4 22		N W 2	Rainy
	3	92				
4	8	85	3 45		W 1	Hazy, rainy, dews at n.
	3	89				
5	8	85	3 23		E 1	Rainy, T L
	8	88				
6	8	87	3 12		S E 2	Cloudy, at n. dews T L
	3	92				
7	8	85	3 23		S E 1	Cloudy, at n. dews T L
	3	90				
8	8	85	3 7		Variable 1	Cloudy, . . . dews T L
	3	89				
9	8	85			N 1	Rainy . . . T L at n.
	3	90				
10	8	80	2 0		N 1	Fair
	3	85				
11	8	85	2 16		S 1	Cloudy
	3	90				
12	8	85		102 11	Var. 1, 0	Rainy T L
	3	89				
13	8	85	Saw Ma- lacca		E 2	Fair
	3	87				
14	8	85			E 1	Cloudy . .
	3	88				
15	8	85			S	Rainy . .
	3	88				
16	8	85	St. John's		W 1	Fair
	3	89				
17	8	86	1 44		N 1	Rainy . . .
	3	89				
18	8	86			N 0	Fair
	3	89				
19	8	85	2 36		S 1	Squally . . .
	3	88				

Meteorological Register, September, 1771. 89

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
			N.	E.		
20	8	85	3 4		S 2	Fair
	3	87				
21	8	84	4 44	105 21	S 2	Squally . . . T L
	3	86				
22	8	83	6 5	105 36	S b E 1	Rainy . . . and foggy
	3	79				
23	8	86	7 5	105 37	Variable	Cloudy . . .
	3	87				
24	8	84	8 35		S W 2	Fair
	3	86				
25	8	83	9 58		S W 2	Hazy
	3	85				
26	8	84	10 46	112 2	W 2	Cloudy, T L
	3	86				
27	8	84	11 28	112 30	W 2	Unsettled & rainy . . .
	3	86				
28	8	83	11 57	113 18	N 2	Squally, rainy . . . T L
	3	86				
29	8	84	12 58	113 52	N W 1	Cloudy .
	3	86				
30	8	85	12 33	114 16	0	Clear and sultry
	3	88				

90 *Meteorological Register, October, 1771.*

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
			N.	E.		
1	8	85	12 13	114 33	Variable 1	Cloudy
	3	88				
2	8	86	12 44	114 57	NWbW 1	Fair
	3	89				
3	8	85	13 15	115 17	N W 1	Fair
	3	90				
4	8	86	13 57	115 33	N W 1	Cloudy . .
	3	90				
5	8	86	13 57	115 55	N W 2	Cloudy .
	3	90				
6	8	86	14 28	116 14	N W 1	Cloudy .
	3	86				
7	8	86	14 43	116 11	Variable	Squally .
	3	86				
8	8	85	14 33	116 14	Variable	Hazy T L
	3	87				
9	8	84	15 8	116 0	Variable 0	Rainy
	3	86				
10	8	85	16 7	115 12	N E 2	Dark and cloudy . . L
	3	87				
11	8	86	16 36	114 52	N E 3	Cloudy L
	3	87				
12	8	85	17 0	114 49	N E b E 2	Cloudy, rainy .
	3	88				
13	8	85	17 36	114 58	E N E 2	Cloudy
	3	87				
14	8	84	18 57	114 56	E N E 2	Fair
	3	86				
15	8	84	20 18	114 46	E N E 2	Cloudy
	3	86				
16	8	85	20 15	115 21	N E 3	Cloudy
	3	86				
17	8	84	21 9	115 18	N E 3	Cloudy
	3	86				
18	8	80	21 48		E N E 2	Fair
	3	84				

Meteorological Register, October, 1771. 91

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
19	8	80	At Mac-cao.		S W	1 Fair
	3	85				
20	8	81			S W	1 Fair
	3	84				
21	8	82			S E	1 Fair
	3	85	At Wam-poa, China			
22	8	78			N	2 Fair
	3	80				
23	8	76			N	1 Fair
	3	83				
24	8	76			N	0 Fair
	3	84				
25	8	78			N	1 Fair
	3	84				
26	8	80			N E	2 Cloudy
	3	85				
27	8	79			N	1 Cloudy
	3	84				
28	8	80			N	1 Fair
	3	85				
29	8	75			N E	1 Cloudy and rainy . :
	3	78				
30	8	72			N	3 Cloudy
	3	74				
31	8	70			N	2 Rainy .
	3	72				

92 *Meteorological Register, November, 1771.*

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
1	8	70	At China		N	1 Rainy
	3	72				
2	8	71			N	1 Clear sunshine
	3	74				
3	8	75			N	1 Fair
	7	77				
4	8	75			N	1 Fair
	2	80				
5	9	78			N	1 Fair, dews at night
	4	79				
6	1	76			N	1 Fair, dews at night
7	10	78			N	1 Clear
		78				
8	10	70			N	2 Heavy dews at night
	5	77				
9	11	75			N	1 Fair
	4	73				
10	11	77				Fair
	4	75				
11	12	76			N	2 Cloudy
	4	78				
12	11	69			N E	3 Fair
	4	65				
13	12	66			N	3 Cloudy
	4	66				
14	11	67			N	2 Fair, dews at night
30	8	65				
	3	67			N	1 Fair, dews at night
	11	60				

From the 14th to the 30th of this month, no regular thermometrical diary was kept. The weather, though temperate and warm in the day-time, was chilly at nights, with heavy dews.

Meteorological Register, December, 1771. 93

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
25	8	61	At China		N	2 Fair, at night dews
	6	59				
26	8	63			N	1 Cloudy
	3	62				
27	8	62			N	2 Fair, at night dews
	6	58				
28	8	62			N	1 Cloudy
	11	55				
29	8	60				
30	8	53			N E	Fair
	11	54				
31	8	54			S	Fair
	4	58				

From the beginning to the 25th, the weather was temperate in the middle of the day, the winds northerly and northeasterly, with dews at nights.

94 *Meteorological Register, January, 1772.*

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
1	8	56	At China		S	1 Fair
	3	66				
2	8	59			S	1 Fair
	8	66				
3	8	60			S	1 Fair
	8	67				
4	8	62			S	1 Fair
	8	67				
5	8	63			S	1 Fair
	8	66				
6	8	53			N E	2 Cloudy
	8	56				
7	8	62			E	2 Fair
	4	60				
8	8	60			E	2 Fair
	4	63				
9	8	61			E	1 Cloudy
	4	62				
10	8	62			E	2 Fair
11	8	62			E	2 Hazy
	3	64				
12	8	64			E	1 Cloudy ••
	3	63				
13	8	62			E	2 Cloudy
	4	64				
14	8	53			N E	2 Cloudy
	4	54				
15	8	54			N E	2 Rainy •
	4	60				
16	8	56			N E	2 Cloudy •
	3	58				
17						
18						
19	8	49			N	1 Cloudy and rainy •
20	8	50				
	3	54				
22	8	54				Fair : at night
	3	54				

Meteorological Register, January, 1772. 95

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
23	8	52	At China		N E 2	Fair
	3	53				
24	8	48			N E 2	Rainy ..
	4	50				
25	8	50			N E 3	Cloudy, . at night
	8	46				
26	8	42			N E 3	Rainy
	4	46				
27	8	50			N E 3	Rainy . . .
	4	52				
28	8	51			N E 3	Fair
	4	53				
29	8	54			N E 2	Fair
	4	56				
30	8	54			N E 3	Cloudy
	3	55				
31	8	56			N E 2	Rainy . . .
	4	56				

96 *Meteorological Register, February, 1772.*

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond	Winds.	Weather.
1	8	55	At China		N E	1 Rainy . . .
	3	57				
2	8	56			N E	3 Rainy
	3	58				
3	8	58			N E	2 Fair
	6	59				
4	8	59			N E	2 Fair
5	8	60			N E	2 Rainy .
	3	59				
6	8	60			N E	1 Rainy .
	3	59				
7	8	60			N E	1 Cloudy
8	8	62			S	1 Fair
9	8	63			S	2 Fair
	3	62				
10	8	64			W	2 Fair
	3	61				
11	8	64			S W	2 Fair
	3	63				
12	8	63			S W	1 Fair
13	8	61			N	1 Cloudy
	8	58				
14	8	59			N	2 Gloomy . . .
	8	57				
15	8	59			N	1 Fair
	3	60				
16	8	62			N	2 Fair
	3	63				
17	8	62			S	2 Rainy . .
	3	61				
18	8	62			S	2 Cloudy . .
	3	60				
19	8	61			N	1 Cloudy
	3	62				
20	8	62			N E	1 Fair
	3	64				

Meteorological Register, February, 1772. 97

Day.	Hour.	Therm.	Lat. obf.	Long from Lond.	Winds.	Weather.
21	8	65	At China		N	1 Fair
	3	66				
22	8	68			N E	1 Fair
	3	70				
23	8	68			N	1 Fair
	3	70				
24	8	69			N E	1 Clear sunshine
	3	70				
25	8	69			N E	1 Fair
	3	50				
26	8	70			N E	1 Fair
	3	72				
27	8	72			N E	1 Fair
	3	74				
28	8	74			S	2 Fair, at night dews
	3	76				
29	8	73			S	1 Fair, at night dews
	3	74				

98 *Meteorological Register, March, 1772.*

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
1	8	73	At Wam poa, China	E.	S	2 Fair
	3	74				
2	8	72			S	2 Cloudy
	3	74				
3	8	72			S	2 Gloomy, T L . . .
	3	72				
4	8	69			S	2 Gloomy . . .
	3	71				
5	8	59			N	3 Gloomy
	3	60				
6	8	58			N	2 Cloudy and dark
	3	53				
7	8	62	Mac- cao. N.		N	3 Cloudy
	3	67				
8	8	67			E	2 Fair
	3	70				
9	8	75	18 8	115 16	E	2 Cloudy . .
	3	76				
10	8	77	16 51	115 24	Variable	1 Fair
	3	78				
11	8	79	16 16	115 20	Variable	2 Cloudy
	3	80				
12	8	79	14 54	115 1	Variable	2 Cloudy
	3	80				
13	8	81	13 26	114 4	E N E	2 Clear
	3	81				
14	8	82	12 32	113 24	E	2 Fair
	3	83				
15	8	83	11 40	112 44	E	Fair
	3	84				
16	8	83	11 2	112 5	E	1 Cloudy
	3	84				
17	8	83	10 23	111 26	E	2 Fair
	3	84				
18	8	83	9 15	109 42	E N E	2 Fair
	3	83				

Meteorological Register, March, 1772. 99

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
			N.	E.		
19	8	84	8 8	108 27	N E 2	Hazy
	3	84				
20	8	83	6 26	107 23	N E 2	Fair
	3	83				
21	8	84	5 6	106 28	N E 1	Fair
	3	83				
22	8	82	3 4		N E 3	Cloudy . .
	3	83				
23	8	84	2 13		E N E 2	Hazy
	3	83				
24	8	83	0 20		Variable 1	Cloudy . .
	3	84				
			S.			
25	8	82	1 14		N E 2	Fair
	3	83				
26	8	83			N E 1	Fair
	3	85				
27	8	84		In the Straits of Banca.	Variable 0	Cloudy
	3	86	2 31			
	12	108				
28	8	84	3 5			Cloudy .
	3	85				
29	8	83				
	12	106	3 7		0	Cloudy .
	3	87				
30	8	83	3 18		0	Cloudy .
	3	86				
31	8	83	4 38		E 2	Cloudy .
	3	86				

100 *Meteorological Register, April, 1772.*

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
1	8	83	At North Island	E.	N W 1	Fair
	3	88				
2	8	82			N W 1	Fair
	3	89				
3	8	83			N W 1	Fair
	3	86				
4	8	83	S. 6 56	Saw Java	N E 2	Cloudy
	3	85				
5	8	83	7 43	102 59	Variable 1	T L rainy . . .
	3	85				
6	8	83	8 55	102 14	E 2	Cloudy
	3	85				
7	8	82	9 58	101 57	N E 3	Cloudy . .
	3	85				
8	8	83	11 41	101 12	E 3	Cloudy
	3	84				
9	8	82	13 18	99 26	S E 3	Cloudy
	3	83				
10	8	81	14 33	96 52	S E 3	Hazy
	3	81				
11	8	80	15 24	94 31	S E 2	Cloudy .
	3	80 $\frac{1}{2}$				
12	8	80	15 56	91 53	S E 3	Hazy
	3	80				
13	8	80	16 24	89 7	S E 2	Cloudy . . .
	3	80				
14	8	80	16 53	86 21	S E 2	Cloudy, at night
	3	80				
15	8	89	17 26	83 52	S E 2	Cloudy, at night
	3	80				
16	8	80	18 5	81 15	E S E 2	Cloudy, at night
	3	81				
17	8	80	18 42	79 3	E 3	Cloudy, . . ecl. of moon
	3	80				
18	8	79	18 50	77 30	E 1	Fair
	3	79 $\frac{1}{2}$				

Meteorological Register, April, 1772. 101

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond	Winds.	Weather.
			S.	E.		
19	8	79	18 52	75 47	E b S 2	Fair
	3	80				
20	8	79	19 23	73 30	E b S 2	Fair
	3	79				
21	8	79	19 59	71 50	E b S 1	Fair
	3	79				
22	8	79	20 30	70 41	E b N 1	Fair
	3	79				
23	8	78	20 56	69 14	E b S 2	Cloudy .
	3	79				
24	8	78	21 28	67 44	Variable 2	Cloudy, at night dews
	3	78 $\frac{1}{2}$				
25	8	76	22 18	65 22	E b S 3	Cloudy, at night dews
	3	77				
26	8	78	23 9	62 43	Variable 2	Fair
	3	80				
27	8	79	24 3	60 54	E 1	Fair
	3	80				
28	8	80	24 52	59 42	Variable 2	Fair . . afternoon
	3	78				
29	8	77	25 17	59 6	N 1	Fair, T L . . at night
	3	76				
30	8	72	25 13	56 36	S b W 2	Cloudy
	3	72				

102 *Meteorological Register, May, 1772.*

Day.	Hour.	Therm.	Lat. obs.	Long from Lond.	Winds.	Weather.
			S.	E.		
1	8	74	26 13	54 0	S	3 Fair
	3	75				
2	8	75	27 21	52 4	S E	2 Fair
	3	75				
3	8	76	28 4	49 49	E	2 Fair
	3	76				
4	8	74	28 57	47 39	E	3 Cloudy
	3	78				
	6	74				
5	8	74	29 51	45 31	E	2 Fair
	3	78				
6	8	74	30 43	43 29	E N E	2 Variable . . . T L
	3	75				
7	8	76	31 2	42 29	N W	3 Cloudy L
	3	76				
8	8	74	29 54	41 52	W	2 Fair
	3	75				
9	8	76	31 22	39 34	N E	3 Squally, L
	3	75				
10	8	76	30 56	39 22	S W	4 Unsettled L
	3	77				
11	8	65	30 48	39 2	S W	4 Squally
	3	68				
12	8	66	30 59	38 12	Variable	1 Fair
	3	69				
13	8	68	31 30	36 51	W	3 Cloudy
	3	68				
14	8	70	31 41	36 36	W	3 Fair, . . . at night
	3	71				
15	8	70	31 41	36 28	N	2 Hazy
	3	72				
16	8	76	32 16	36 16		0 Cloudy
	3	74				
17	8	75	33 30	35 18	N E	2 Fair
	3	72				
18	8	75	34 58	33 24	N	3 Hazy
	3	71				

Day.	Hour.	Therm.	Lat obs.	Long. from Lond.	Winds.	Weather.
			S.	E.		
19	8	74	35 5	32 16	W	1 Fair
	3	72				
20	8	62	35 42	31 34	N W	3 Cloudy
	3	60				
21	8	65	34 52	31 34	W	4 Cloudy .
	3	65				
22	8	65	35 22	31 43	W	4 Squally
	3	64				
23	8	65	35 3	31 34	W	3 Unsettled . . .
	3	65				
24	8	66	34 35	31 20	W	2 Rainy
	3	66				
25	8	74	34 50	30 18	N E	3 Fair
	3	75				
26	8	70	35 17	29 33	N E	3 Hazy, L at night
	3	72				
27	8	70	35 47	28 8	S W	3 Fair
	3	65				
28	8	70	35 40	27 38	N W	2 Fair
	3	65				
29	8	68	35 9	27 20	W	2 Cloudy
	3	62				
30	8	65	34 58	27 4		c Fair
	3	64				
31	8	64	35 10	25 54	N W	2 Fair
	3	63				

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
			S.	E.		
1	8	63	35 22	25 41	N W 2	Cloudy, L
	5	61				
2	8	55	35 3	25 37	W 2	Squally, .
	3	57				
3	8	58	34 37		Variable 2	Cloudy
	3	59				
4	8	64	32 2		S E 2	Fair
	3	61				
5	8	65				
	3	62	31 35	14 39	E 2	Fair, dews at night
	6	60				
6	8	63	29 39	12 43	S E 2	Fair, dews at night
	3	63				
7	8	64	28 3	11 13	S S E 2	Fair, dews at night
	3	62				
8	8	64	26 45	9 58	S S E 2	Fair, heavy dews at n
	3	66				
9	8	65	25 42	9 5	N W 1	Fair, heavy dews at n
	3	66				
10	8	66	24 8	8 33	W 2	Cloudy
	3	67				
11	8	67	23 20	8 8	S b E 1	Fair
	3	68				
12	8	71	23 0	7 53	S S E 1	Clear
	3	68				
13	8	68	22 4	7 3	S W 2	Clear
	3	67				
14	8	68	20 3	5 27	S b E 2	Cloudy .
	3	67				
15	8	71	18 58	3 31	S E b S 3	Cloudy . .
	3	67				
16	8	72	17 21	1 29	S E 3	Cloudy
	3	69				
				W.		
17	8	70	16 14	0 31	S E 3	Cloudy .
	3	68				

Meteorological Register, June, 1772. 105

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
18	8	72	S.	W.		
	3	72	16 0	2 26	S E b S 2	Fair
19	8	72	At St. Hele- na.		E S E 2	Cloudy
	3	73				
20	8	72			S E 1	Fair
	3	73				
21	8	74			S E 1	Cloudy . . .
	3	73				
22	8	72			S E 1	Squally .
	3	75				
23	8	75			S E 1	Clear
	3	75				
24	8	75			S S E 1	Cloudy
	3	74				
25	8	74			S E 1	Cloudy
	3	74				
26	8	74			S E 1	Fair
	3	73				
27	8	75			S E 2	Squally .
	3	75				
28	10	75		7 10	S E 2	Squally
	3	74				
29	8	73	14 42	8 57	S E b E 2	Fair
	3	73				
30	8	73	13 2	10 29	S E 2	Cloudy
	3	74				

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
			S.	W.		
1	8	75	11 40	11 32	S E b S 2	Dark clouded sky
	3	74				
2	8	76	10 31	11 50	S E b S 2	Cloudy
	3	75				
3	8	77	9 39	12 15	Variable 1	Cloudy
	3	76				
4	8	78	8 54	12 58	S E 1	Fair
	3	79				
5	8	80	8 17	13 37	S E b S 2	Cloudy
	3	79				
6	8	80	6 56	14 26	S S E 2	Cloudy .
	3	80				
7	8	80	5 13	15 28	S E 2	Fair
	3	81				
8	8	82	3 39	16 36	E 2	Fair
	3	80				
9	8	81	1 38	17 56	S E 3	Fair
	3	80				
10	8	82	N. 0 25	19 12	S E 3	Clear
	3	79				
11	8	82	2 19	20 22	S b E 2	Cloudy
	3	80				
12	8	81	3 57	21 22	S S E 2	Cloudy
	3	82				
13	8	83	5 12	21 48	S S E 2	Cloudy, L at night
	3	85				
14	8	86	6 10	22 3	N N W 1	Rainy
	3	78				
15	8		7 39	22 29	Variable	Rainy . . .
	3					
16	8	82	8 26	22 44	S S E 1	Cloudy . . . T L
	3	79				
17	8	79		22 56	Variable 1	Cloudy
	3	78				
18	8	76	8 35	23 4	Variable c	Squally . . .
	3	76				

Meteorological Register, July, 1772. 107

Day.	Hour.	Therm.	Lat. obs.	Long from Lond.	Winds.	Weather.
19	8	76	N.	W.		
	3	77		23 22	Variable 0	Rainy
20	8	79				
	3	78		23 55	Variable 1	Cloudy . .
21	8	80				
	3	82	11 0	24 30	N W 2	Cloudy .
22	8	84				
	3	85	11 23	25 10	Variable	Squally .
23	8	84				
	3	84	12 7	25 54	N E 2	Cloudy .
24	8	82				
	3	80	13 35	26 32	N E 2	Cloudy . .
25	8	81				
	3	82	15 5	27 24	N E 3	Cloudy .
26	8	80				
	3	82	16 9	28 56	N E 3	Fair
27	8	79				
	3	81	17 39	30 31	N N E 2	Cloudy, . at night
28	8	80				
	3	82	19 0	32 14	N E 3	Cloudy
29	8	80				
	3	80	21 2	33 48		Cloudy
30	8	81				
	3	82	23 18	34 17	E N E 3	Cloudy . .
31	8	82				
	3	83	25 27	35 38	N E 3	Fair

108 *Meteorological Register, August, 1772.*

Day.	Hour.	Therm.	Lat. obf.	Long. from Lond.	Winds.	Weather.
			N.	W.		
1	8	81	27	9	37 17	N E 2 Cloudy
	3	82				
2	8	80	28	15	38 33	N E b E 2 Cloudy, • at night
	3	80				
3	8	82	29	41	38 59	N E 2 Fair
	3	82				
4	8	82	30	50	38 41	E 1 Cloudy
	3	83				
5	8	82	32	16	38 33	E S E 1 Cloudy
	3	84				
6	8	85	32	0	38 56	N E 0 Fair
	3	86				N E 3 Rainy ••
7	8	79	33	21	39 42	N E 2 Cloudy
	3	80				
8	8	79	34	21	40 36	N E 2 Fair
	3	80				
9	8	81	34	58	40 44	S 1 Cloudy •
	3	80				
10	8	81	36	16	39 51	S E 2 Cloudy •
	3	82				
11	8	79	37	53	38 29	S W 2 Fair
	3	80				
12	8	78	39	25	36 37	N W 2 Cloudy ••
	3	80				
13	8	74	40	0	35 22	W 1 Cloudy
	3	78				
14	8	76	41	0	33 34	W 2 Hazy ••
	3	75				
15	8	76	41	4	31 56	N E 2 Cloudy
	3	77				
16	8	75	39	50	30 41	E N E 2 Fair
	3	76				
		69				
17	8	75	40	21	31 13	E 2 Fair
	3	74				

Meteorological Register, August, 1772. 109

Day.	Hour.	Therm.	Lat. obl.	Long. from Lond.	Winds.	Weather.
			N.	W.		
18	8	74	40 42	29 . 0	S W	1 Fair
	3	74				
19	8	72	41 48	26 53	W	2 Hazy
	3	74				
20	8	72	42 43	24 54	W	3 Squally
	6	65			N E	3
21	8	68				
	3	70	43 23	21 7	N W	3 Cloudy
	6	68				
22	8	66	44 37	17 59	N W	4 Rainy . .
	6	64				
23	8	62	45 57	14 38	NWbN	4 Squally thick weather
	6	63				
24	8	63	47 24	12 15	NN W	Squally, cold at night
	6	61				
25	8	62	48 38	10 48	N W	2 Cloudy, very cold at n.
	6	62				
26	8	60	48 10	9 30	S S E	2 Hazy and squally
	6	62				
27	8	64	48 36	6 19	E	2 Hazy and raw weather
	6	63				
28	8	64	49 12	2 34	S W	4 Cloudy and thick
	6	63				
29	8	65	49 21		S W	2 Cloudy, at night thick
	6	63			S W	3 and hazy
30	8	65			S W	3 Hazy & thick weathe
31	8	65	Isle of			
	6	64	Wight		W	3 Hazy

P A R T II.

Practical Observations on the Diseases of the East Indies.

C H A P. I.

HAVING, in the former part, given a general account of the prevalent diseases in voyages to the East Indies, and in different places in that part of the world, I shall now proceed to divide them into their proper classes, and to offer some practical observations on each distemper.

The diseases which appear on the first embarkation, when voyages are undertaken in the winter or spring season, are colds, sore throats, pleurifies, and other fevers, with topical inflammation. These being the prevailing winter complaints of Great Britain, are purposely omitted.

S E C T. I.

General Division of the Diseases in the East Indies.

IN laying down the division of the diseases, for the sake of greater perspicuity I shall first consider those which usually occur at sea, and are no way affected by land exhalations, and then enumerate the more fatal epidemics of warm and unhealthy situations.

The diseases to be met with in the longest voyages to the East Indies are few, and invariably the same, and may be considered under the following heads :

1st, Such diseases as are occasioned by heat.

2d, Such as are occasioned by heat and moisture.

3d, Such as are the consequence of cold and moisture.

At sea, the diseases which are occasioned merely by heat are few and very inconsiderable. If the voyage is favourable, and there are no long continued calms,
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the crew generally enjoy a good state of health, and are never afflicted with dangerous diseases. The common effects which immoderate heat has upon the constitution, are, relaxation of the system, rarefaction of the fluids, and a more liberal secretion of bile; hence loss of appetite, nausea, head-ach, acceleration of pulse, and slight ardent fevers, admitting of an easy cure. Therefore heat alone may be rather considered as a remote predisposing cause of sickness, which will unavoidably happen when succeeded by a humid and stagnant atmosphere.

The diseases occasioned by heat and moisture are remitting fevers or putrid continuals, which I have generally met with between the tropics, and particularly in the latitudes near the equator, where the air is commonly in a moist and hazy state, and where, on account of frequent calms, there are noxious exhalations from the ocean. As the voyage is protracted, these fevers assume a worse disposition, and even after the arrival of seamen in healthy harbours, a greater putrefaction
in

in the fluids is indicated by gripes, tenesmus, and other dysenteric symptoms.

The most common disease at sea, arising from cold and moisture, is the scurvy, which seldom or never appears in voyages to the East Indies, till the ships have arrived in the stormy latitudes off the Cape of Good Hope. If the weather is dry, and the passage quick into more temperate latitudes, but particularly if the seamen have had sufficient refreshment before they undertook the voyage, the disease is seldom to be seen, or, if it does make its appearance, is not mortal. On the contrary, when ships are long detained by unfavourable winds, in cold and stormy weather, especially when seas continually wash the deck, the situation of the common sailor is then truly deplorable; for, when upon duty, he is wet and fatigued; and when it is his turn to go below, he has no place to retire to, but a dirty berth or a wet hammock, where he must breathe a polluted air. These circumstances never fail to produce the scurvy; the men begin to fall down daily; and at last
even

even the officers, who live better, who have dry clothes and apartments, are affected, and suffer more or less by the disease. I am well aware, that we meet with instances of the scurvy breaking out in warm climates, which happened to lord Anson's squadron, after leaving the coast of Mexico; but in this case it is to be remembered that they had suffered much by the disease before, and might therefore the more easily relapse, altho' they lived upon fresh diet, and kept the ship well aired and clean; besides, we have some reason to conclude, from the account given of the disease by the ingenious compiler of that voyage, that it was combined with a putrid fever. I would not, however, seem to infer that such rainy weather as happened at that time will never produce the scurvy in warm climates; but instances of it are seldom to be met with; and it may be affirmed in general, that putrid fevers are the consequence of heat and moisture; and that the scurvy, a disease of a very putrid nature, yet quite opposite to a fever, is the consequence of cold and moisture.

I come now to consider the most frequent land diseases in the East Indies, which cannot be so properly divided into acute and chronic as into the diseases of the dry, and those of the wet season.

The prevailing diseases of the dry season are fluxes from acrid bile, the colera, dry belly-ach, inflammations and obstructions of the liver. These are the complaints of the dry months on the coast of Malabar and Coromandel; and even at Bengal and other marshy countries, the fevers which precede the rains are seldom of a deleterious nature.

The diseases of the wet season are fevers and fluxes, which are malignant in proportion to the heat and humidity of the air, and to the noxious exhalations from marshes and uncultivated tracts of country; as they only differ in degree, they may be all referred to the same class; for to characterise them by difference of place would be endless, unnecessary, and perplexing.

Thus far having classed the diseases depending upon the weather or the seasons, it
will

will appear that the most destructive diseases in the East Indies are the fever, colera, dry belly-ach, dysentery, hepatitis ; and at sea, from unavoidable circumstances, the scurvy. These shall be treated of in their proper places.

But as fevers are the most frequent and common of all diseases, it remains to consider, in a cursory way, the usual denominations by which they have been distinguished, and to refer the fever, which is the subject of our present enquiry, to its proper class.

S E C T. II.

Of the Division of Fevers.

THE most simple and least confused division of fevers is into intermitting, remitting, and continual. These are real distinctions in nature, and are all that have been made by Hippocrates* and Celsus†.

As

* Ex Febribus autem aliæ sic desinunt, ut ex toto sequatur integritas, antequam altera accessio
2 incipiat.

As intermitting and remitting fevers depend upon the same cause, easily change into one another, and can only be removed by the same medicines, no just and precise limits have been fixed to the two classes by medical writers; and for

incipiat. Intermittentes ideo dictæ sunt; quarum alia quotidiana, alia tertiana, alia quartana est; ex his aliæ componuntur; aliæ admodum incertis horis repetunt; quædam sed rariùs longiori intervallo, ut quintanæ, &c. redeunt.

Aliæ vero Febres aliquantulum quidem minuuntur, sed inhærent tamen, donec novus motus fiat; aliæ vix quicquam, aut nil remittunt; utrasque Febres continuas, appellat Hippocrates, posteriores in continuas & continentes diviserunt.

Distinguuntur etiam ex accidente quodam insigniori concomitante; ut alia sit ardens, alia singulans, alia *λειπυρία*, alia *ασσῶδης* & innumera sanè nomina, hac ratione, Febribus imposita sunt. De nominibus vero non admodum sollicitus erat medicinæ parens; et Cnidiis quidem vitio dat, quòd passionum nominibus nimis inhæserint; ipse autem animum ad vehementiam Febris, vires ægrotantis, et inclinationem morbi præ ceteris attendebat.—
Th. Glafs Comment. de Febribus, ad Hipp. Disciplinam accommodati, pag. 3. Lond.

† Vide Corn. Celsi Medicina, de Febrium Generibus.

this

this reason many authors have referred every species of remitting fevers to the class of intermittents, of which a tertian seems to be the most constant form. All other changes, whether quotidian, double tertian, quartan, &c. are only to be considered as different modifications of this general type. The tertian fever, when taken in this extensive sense, is the prevailing epidemic of all warm climates; nor, from the earliest ages of physic down to the present times, do we meet with a description of a fever raging universally in any country, which may not be referred to this tribe.

But as tertians assume such various forms, and are too anomalous, both in their remissions and accessions to admit of such regular divisions as are usually made; all minute distinctions are laid aside in a disease, which, though different with respect to periodical intervals, is essentially the same; and all interrupted fevers are considered under the more general heads of remitting and intermitting.

An intermitting fever or ague leaves the patient free from every symptom of

fever, and, after the lucid interval, returns with rigors, bringing on another paroxysm, which terminates as the former. Under this head are only comprehended regular intermittents, whether quotidian, tertian, or quartan.

A remitting fever is supposed to have remissions and exacerbations, which in some are very distinct and evident; in others, there is only a mitigation of the symptoms, the fever still remaining till another accession is brought on without any rigors. Such fevers are the prevailing epidemics of all hot climates, and only differ from intermittents in the intervals being less distinct, and in the paroxysms not being preceded by rigors. Under this head are comprehended every species of tertian, however irregular.

A continued fever* is supposed to run

* Continual fevers, by many practical writers, have been divided into three classes, the inflammatory, the nervous, and the putrid or malignant. The first is the concomitant of inflammation in any membranous part of the body; the other two denominations are of little consequence, as the cure in both is exactly the same.

on

on without any sensible remissions, and in this sense it may be considered as one paroxysm, till the disease terminates in recovery or death. But in the most continued which I ever met with, although no distinct remissions have happened, yet I have always observed some alleviations, and exacerbations, and, in general, all fevers are aggravated towards night; so that we may safely conclude, it is the nature of every fever to remit, if it is not accompanied with local inflammation. In warm climates at least, the frequent changes of remitting, intermitting, and continued fevers into one another, shew them to be of the same nature; and, in my opinion, the circumstance of their intermitting, remitting, or being more continual, is merely accidental, depending upon the difference of constitution and place, but particularly upon the state of the atmosphere. Thus, we generally observe, when a fever breaks out in a sultry and dry state of the air, it assumes a continued form; when the air is moist and suffocating, but particularly when

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filled with land exhalations, it appears in the form of a putrid remittent; and when the weather becomes inoderately cool, pure, and temperate, it does not in the least differ from a regular intermittent.

The division of fevers into inflammatory and putrid seems to be of more consequence, as these too classes require very different methods of cure. It is the putrid disposition which alone prevails in all the fevers of hot climates, whether of a remitting, or of a more continued form.

By the term putrid, when applied to fevers, we mean, that evident symptoms of putrefaction have taken place, such as foetid breath, hæmorrhage, offensive stools, livid blotches, and great prostration of strength.

The term ardent, when applied to fevers, is retained in the sense used by the ancients, and is to be considered as a fever of a few days standing, accompanied with nausea, great heat, thirst, and bilious vomiting.

CHAP.

C H A P. II.

Of the Remitting Fever.

S E C T. I.

Description of the Disease.

TH E remitting fever may occur at any time in hot climates, but seldom rages epidemically, unless in close, moist, and sultry weather. In treating of this disease, I shall first give a history of its symptoms, as it appears at sea, when it is not affected by exhalations from the land.

The fever generally attacks with lassitude, rigors, sometimes only with a chillness, pains of the back and bones. These symptoms are succeeded by sickness at stomach, great heat, thirst, and pains above the eye-brows. The pulse, though soft, becomes very quick and full, the countenance is flushed, the head aches violently, the patient is troubled with great restlessness, anxiety, and oppression, and in the height of the paroxysm vomits

abundance of bile. The crisis of the fit is generally by sweat, and the patient enjoys a short lucid interval, during which the pulse seldom returns to its natural state, and almost all complain of a bitter taste in the mouth, giddiness, head-ach, and prostration of strength. In a few hours, the feverish accession returns, which is only known by an aggravation of all the symptoms, and is carried off by a sweat, as the former paroxysm; or sometimes by an evacuation of bile.

If the disease is neglected, the remissions grow more indistinct, and, sooner or later, it acquires a continued form, accompanied with many of the following symptoms: the tongue, which before was only white and furred, becomes dry and black; the teeth and lips are covered with a tenacious slime, and sometimes apthæ appear in the mouth and throat. The heat, head-ach, and inquietude are greater; the eyes either become dull and heavy, or wild and staring, and the patient falls into a coma, or delirium, attended with tremors and subfultus tendinum;

num. As the strength sinks, the pulse becomes very small and fluttering, and the heat of the skin is changed into a cold clammy moisture. If there have been no symptoms of putrefaction before this, they now appear; these symptoms, however, do not always take place; for I have seen the patient carried off without any evident marks of dissolution in the blood, even when the disease has continued several weeks.

Sometimes, instead of the paroxysms already mentioned, the patient, at first, was only indisposed with giddiness, headache, and low spirits, and although still able to go about, was always worse at night. When the attack was in this form, I have generally observed the fever in its course to be attended with greater danger, less distinct remissions, and more evident symptoms of putrefaction.

These are the common characteristic symptoms of the fever, both at sea and in favourable land situations. In low, woody, and unperforated countries, where, besides intense heat, there is likewise

great moisture, but especially if there are noxious effluvia from marshes or stagnant waters, the disease is more rapid, universal, and fatal. As an instance of the most malignant and putrid fever which I have ever seen in any part of the East Indies, I shall here give a description of the marsh fever which raged at Bengal in the year 1768.

This fever attacked in various ways, but commonly began with rigors, pain and sickness at stomach, head-ach; oppression on the præcordia, and great dejection of spirits. Sometimes, without any previous indisposition, the patients fell down in a deliquium, during the continuance of which the countenance was very pale and gloomy. As they began to recover from the fit, they expressed the pain they suffered by applying their hands to the stomach or head; and, after vomiting a considerable quantity of bile, they soon returned to their senses. Sometimes the attack was so sudden, and attended with such excruciating pain at stomach, and so great a degree of timidity
and

and faintness, that I have been obliged to give an opiate immediately.

In whatever form the disease appeared at first, the pulse was small, feeble, and quick, the pain of the stomach increased, and the vomiting continued. As the paroxysm advanced, the countenance became flushed, and the pulse very quick and full. The eyes were red, the tongue furred, the thirst intense, and the head-ach exceedingly violent. A continuance of these symptoms soon brought on a delirium, in which the patients were very unmanageable; but a profuse sweat breaking out in twelve or thirteen hours generally mitigated all the symptoms.

In the remissions, the pulse, which before was frequently 130, fell to 90, the patient returned to his senses, but complained of great debility, sickness at stomach, and a bitter taste in the mouth. This interval, which was very short, was succeeded by another paroxysm, in which all the former symptoms were much aggravated, particularly the thirst, delirium, pain at the stomach, and vomiting of

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bile.

bile. The breath and sweats, even so early as this, began to be offensive.

If the disease was neglected in the beginning, the remissions now totally disappeared, and the skin became moist and clammy. The pulse was small and irregular, the tongue more black and crufted, and the pain at the stomach and vomiting of bile became more violent.

When matters were arrived to this pass, all the excretions, but especially the stools, were very offensive, and ran off involuntarily; and the patients now, instead of being highly delirious, laboured under a coma, with interrupted ravings. Subfultus tendinum, tremors, and hiccup were added; the extremities grew cold, and were covered with livid vebices, and the body, for several hours before death, very frequently emitted a cadaverous smell.

The appearance of the urine, in fevers of warm climates, is not much to be depended upon; in the beginning of the paroxysm, it is pale; at the height, of a higher colour, but seldom or never deposits any sediment.

If

If the fever was neglected at first, it generally proved fatal betwixt the third and seventh day; in some cases, indeed, where the exacerbations were not so severe, I have seen it protracted to the 15th, and sometimes even to the 20th*.

The fever, however short time it continued, brought the patient so very low, that it was some weeks before he recovered the least degree of strength. It did not, indeed, carry off any of the patients under my care, except one who refused taking the bark, another who went overboard, in a delirium, during the first paroxysm, and such as were too far gone before I vi-

* I was informed by a surgeon, who resided at Calcutta, that there were many instances of the patient's being carried off, highly delirious, in the first fit, but that he still lost more in the third paroxysm. His practice was to exhibit an emetic at first, and afterwards, he endeavoured to bring the fever to remit by antimonials and saline draughts. Here the first paroxysm seems to have been too rapid to admit of a cure by the most powerful medicines; but the danger from the third might certainly have been obviated by an early exhibition of the bark.

sited them. A relapse, which brought on diseases of the liver, and the dysentery, which raged at the same time, and frequently attacked them in the convalescent state, proved more fatal.

Thus I have given a description of the remitting fever, drawn from a variety of cases which came under my observation in different parts of the East Indies; and both from my own experience, and from the information I have received from others, concerning this fever, I am convinced that it is every where the same, and requires the same treatment. The marsh fever at Bengal, of which a separate history has been given, differs from the rest only in being more universal and more malignant; yet the remitting fever of more favourable situations are sometimes attended with as putrid and dangerous symptoms. This will appear more fully in the sequel, when the particular cases are considered.

Moist damp weather, after long continued heats, has been justly reckoned the occasional cause of remitting fevers in all countries; and noxious exhalations from

marshes and uncultivated tracts of ground, never fail to render it more fatal and epidemic. Besides these general external causes, I shall mention some others, which seem to have a very powerful influence on the disease, and render it more fatal. These are principally too great inanition, too great repletion from a diet of animal food, the affections of the mind, and contagion.

The two first are such evident causes of sickness that none can doubt their powerful influence; nor does it escape the eyes of the most common observer at Bengal; that those who have been much reduced by evacuations, particularly by mercury, and great eaters of animal food, are more liable to the sickness of the season than the hale and temperate; and, when seized, have a much worse chance to recover. Seamen also, from a very improper diet of animal food, and the total want of vegetables, are more subject than others to diseases, upon their arrival at unhealthy ports.

Disappointment and the dejecting passions of the mind are very powerful pre-

predisposing causes. It is owing to this, that the diseases of the season are so very fatal to many young adventurers, who annually emigrate in expectation of acquiring sudden riches. Upon their arrival, finding all their airy dreams suddenly dissipated, they become low spirited, and are carried off as it were in an instant; whereas others, as little inured to the climate, but who have better prospects, are by no means so liable to sickness, and when attacked, the diseases are not of such a dangerous nature. But of all the affections of the mind none are attended with such powerful and sudden effects as apprehension and panic; for, I have observed, when a dangerous fever has appeared on board ship, that the alarm has occasioned instant sickness. It is, perhaps, easier upon this than any other principle to account for the sudden deaths* which frequently happen to those who have been attending the funeral of a deceased friend; for if the sickness, as one may be apt to imagine, was occasioned by

* Vide Part I. page 53.

the exhalations from the marshy burial-grounds, or putrid miasmata from the water, which issue from the adjoining graves, the grave-diggers would be more subject to be attacked than the attendants on the funerals. This, however, is not the case; for it generally happens that the timorous and humane suffer, while the hard-hearted and callous escape. I shall now proceed to consider another and more powerful cause of the putrid remitting fever.

This fever in hot climates at first seems to be infectious only from the constitution of the air; but afterwards, during the continuance and rage of sickness, there is no reason to doubt a worse kind of contagion from the putrid effluvia of the sick. This was very evident in the marsh fever at Bengal. At first, only two or three of our people were affected, who had been employed in hard duty upon deck; but in a fortnight, the fever and flux were so universal, that we had few people capable of doing duty; nor did any escape except the officers and quarter-masters, who had no communi-
cation

cation with the sick, and the cooks who worked in the galley amongst the smoke. Whilst this was the case on board of us, the Dutton was burying her people every day; and, at the same time, the Salisbury and Queen, other two of the company's ships, although at no great distance, and anchored nearer the shore, enjoyed almost a total immunity from sickness. Another instance, which plainly shews the power of contagion, was the great mortality amongst the visitors and attendants upon the sick. Nor was the fever less infectious at Calcutta, where the patients lay in large rooms; the putrefactive symptoms still ran as high; and merely from being, for a short time, in the apartments of the sick, I have often experienced all the symptoms of an attack, and suffered much from sickness, although not naturally addicted to fevers, and using every method of prevention.

Dissections throw no light into the proximate cause of the disease, as they only shew its effects. Its seat appears to be at first in the stomach and duodenum,
and

and a great secretion of acrid bile, whether the cause or effect of the disease, seems to render it worse. The head-ach and delirium only appear to be symptomatic, and not to depend on inflammation. Imagining it enough for the indication of cure, to know the occasional causes of the disease, I shall frame no hypothesis concerning its proximate cause, the best of which are only mere conjecture, and subject to many objections. I shall therefore proceed to make some observations on the medicines commonly prescribed in this fever.

S E C T. II.

Observations on particular Remedies.

I. ALTHOUGH the genus of this fever does not seem to require bleeding, yet it has been recommended universally by all practitioners, with a view to remove plethora, to reduce the fever, and bring it to regular remissions. In cold and temperate.

perate climates, this evacuation may sometimes have a good effect; at least, taking away some blood in the beginning of any fever can be attended with no great danger. It may likewise be used upon first entering into warm weather, when many of the fevers are so mild as to require almost no other cure than to cleanse the primæ viæ, and to produce an equable perspiration by relaxants: but after a short continuance in a warm climate, this evacuation is very detrimental. I have been frequently induced to try it, when it seemed to be strongly indicated by great drought, head-ach, flushed countenance, and oppressed pulse; but I seldom ever saw it answer any good purpose.

Encouraged by the similarity of the Bengal fever to that of the marshes described by sir John Pringle, without paying any regard to the difference of climate, I thought the violence of the fever required at least one bleeding; and finding the same evacuation recommended by Dr. Huck and Cleghorn, I was induced to open a vein during the first paroxysm in
three

three of our patients at Culpee. The consequence was, the first did not bear the evacuation, his pulse flagged, and he was very delirious in the ensuing fit, the remissions were very insensible, and the exacerbations were only to be known by his delirium. The other two were seized very suddenly, and fell down in a deliquium; on opening a vein, they returned to their senses; but before five or six ounces of blood were taken, they became faint, and the feverish paroxysm ran higher than in those who did not suffer the evacuation. For the future I was determined to be very cautious in blood-letting; and, since that period, have laid it aside in every fever in warm climates, both at sea and on shore, unless accompanied with topical inflammation.

II. I have given antimonials in various preparations, but prefer emetic tartar to all others. At first, carefully avoiding every addition which might decompose the acid, it was exhibited dissolved in pure water. As I found a powder more convenient for common use, it was rubbed

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with

with five parts of sugar, to make it more divisible. This preparation, though ever so carefully corked, after keeping, turned moist and crufted; the sugar was therefore changed for the same quantity of magnesia; nor, by this means, did I observe the emetic tartar in the least robbed of any of its virtues, which one might expect from the addition of the absorbent. However, if, after exhibiting a few doses of this medicine, its operation does not proceed to our wishes, drinking acidulated liquors will not only render this preparation, but almost every other antimonial, more active.

Sometimes I have given Dr. James's powder; but, from what I have seen, must observe, that it is a much more uncertain antimonial than emetic tartar, frequently lying inert in the stomach and bowels for several hours, and afterwards operating with great violence. Even when it succeeds to our wishes, its effects are exactly similar to those of emetic tartar, which last ought certainly to be preferred to a remedy, the preparation of which we are perfectly ignorant of; and, indeed, the

only advantage which this famed powder has above the other, is its being kept a secret, and sold at the enormous price of half a crown the dose. It is, however, still sent out, with directions, to hot climates. When in proper hands, I shall not presume to say that it is an useless medicine ; but when given indiscriminately, and continued for any length of time, I am certain that this fever-powder too often proves fatal. The long-continued use of it can only be proper in inflammatory fevers of cold climates ; but the profuse evacuations, particularly the profuse sweats which it occasions, renders it highly injurious in the putrid fevers of hot climates.

Emetic tartar, when given in small doses, is supposed to be possessed of highly febrifuge virtues. This, in some measure, appears to be literally true, as we often see a remission ensue after its use, which, I imagine, happens in the following manner. During its operation, it occasions a strong artificial paroxysm, which at last is carried off by a profuse sweat,

although the original disease may still continue, and in a few hours be as much exasperated as ever. Its febrifuge virtues, in hot climates, seems principally, if not altogether, to depend upon its evacuating powers, and its causing a derivation to the skin, which sometimes removes a fever just in the same way as the timely exhibition of a puke and sweat. But when once the fever is confirmed, I have often given emetic tartar, without observing it possessed of any virtues either to remove it, or bring it to more regular remissions. When the disease has arrived to any degree of malignity, such a stimulating relaxant is very hurtful.

III. The saline draughts of Riverius are generally prescribed, with a view to dilute the bile, to cause a diaphoresis, and to bring the fever to more regular remissions; but, as most fevers have this disposition, what is merely the nature of the disease has been imputed to the effects of the medicine. When given in an effervescent state, they will sometimes stay a vomiting, and remove an urgent symptom ;

tom ; but when exhibited alone, the highest character which can be given of them is, that they are very inoffensive, but possessed of no virtues, either to cure a fever, or to bring it to more regular remissions. The other remedies, which have been tried with the same intention, are spiritus Mindereri and nitre. Whole pints of the first have been given, without producing any sensible effect ; and as for nitre, if the fevers of warm climates demand the use of it, the stomach of the patient will not bear it in sufficient doses to answer any good purpose ; and, indeed, the prescribing of such remedies can only be accounted a specious pretext of doing something. When no other remedies are necessary, they are much surpassed by lemonade, and barley or rice-water acidulated, the usual drinks and diluents of the patient.

IV. Amongst the class of cordial and alexipharmic medicines, I have tried camphor, serpentaria, musk, castor, sal succini, sal cornu cervi, and the pulvis contrayervæ. The first was commonly pre-

scribed in the form of the *julepum camphoratum* of the London Dispensatory, with a view to cause a diaphoresis to relieve the head, or to abate some urgent symptom, but very seldom with any remarkable success. In whatever way camphor is prescribed, it is a very nauseous medicine, and, in hot climates, will never sit, in sufficient doses, upon the patient's stomach. The *serpentaria* was most commonly given in the form of decoction, with a little *theriac*; it seemed to answer better than most medicines of this class, and was attended with considerable advantage in the decline of fevers, when accompanied with a profuse diarrhœa: however, the same intentions may be answered by much more agreeable medicines; for this reason, even at first, I never put much stress upon it, and, in my later practice, have laid it entirely aside. I do not recollect a single instance of the good effects of any of the rest, except musk and the *sal cornu cervi*. The first, if given to the quantity of a scruple every four hours, seldom fails to abate
hiccup

hiccup and other nervous symptoms, and it likewise acts as a powerful cordial and diaphoretic. The latter was only prescribed in low cases as a stimulus, and therefore was never long continued. In short, little dependence is to be put upon most medicines of this class. If they are prescribed with a view to relieve the head, they are much surpassed by blisters; wine answers, the purpose much better as a cordial; and warm fomentations, or pediluvia, as antispasmodics and diaphoretics.

S E C T. III.

The Cure of the Disease.

HAVING made some observations on the usual medicines prescribed in this fever, I shall now proceed to lay down the method of cure, which, in the course of my practice, I have found most effectual.

I. Nothing is more indispensibly necessary, in the beginning of this fever, than to cleanse the intestinal tube by gen-

the vomits and purges. Nature seems always to indicate such evacuations by the plentiful secretion of bile, which, if not speedily discharged, often brings on an inflammation of the stomach, nausea, and hiccup, preventing, in the course of the disease, the effects of the most powerful medicines.

When the fever attacked slowly, or when I was called in the remissions, I found it the best course to give a vomit of ipecacoanha, with a few grains of emetic tartar. If this did not move the belly, next day a dose of neutral purging salts was prescribed.

But, in dangerous fevers, which rage epidemically, no time is to be lost; therefore this method of evacuation is too tedious. In such cases, I have always trusted to emetic tartar, given to the quantity of a quarter or half a grain every hour, till it acted by vomit and stool, which last intention is rendered more certain by the addition of manna, decoctum tamarindorum, or a small portion of sal catharticus. Any of these medicines
ought

ought to be given immediately after the rigors, as they not only mitigate the feverish paroxysm, but bring it to a quicker solution. But it is proper to observe, that evacuations of this kind are not to be long continued; for it will be in vain to expect by this means to prevent a generation of bile; for so long as the feverish indisposition continues, although an emetic and cathartic were repeated every day, more fordes will still be generated; but as soon as the fever, which is the cause, is removed, the effect of consequence will cease.

II. As soon as the intestinal tube has been thoroughly cleansed, the principal part of the cure consists in prescribing the Peruvian bark in as large doses as the patient's stomach will bear, without paying any regard to the febrile remissions and exacerbations. If the remissions are distinct, the bark will have a more speedy effect; but even although the disease is continued, by its use, it is as effectually prevented from growing dangerous and malignant. The bark being anti-sceptic,

sceptic, cordial, and never suppressing any critical secretion, is well adapted for the cure of fevers in hot climates. When the stomach is weak, it ought to be given in decoction; but, as soon as the patient can digest it, immediate recourse is to be had to the powder, either in the saline draught, port, or in any other form most agreeable.

If, after evacuations, the stomach remains weak and squeamish, which is often the case in bad fevers, I have often found the greatest advantage from prescribing a full dose of solid opium. It seldom fails to remove these symptoms, and then the bark will sit easy on almost every stomach. On the contrary, if the disease is allowed to go on, the disorder at the stomach will encrease, and other symptoms supervene, which will render the effect of every medicine very precarious.

The most certain effects of the bark are a gentle equable sweat and a loose stool. If it does not produce this effect, and especially if the symptoms indicate bilious redundancies in the primæ viæ, laxatives
ought

ought to be joined with it ; but if it runs off by stool, it is indispensably necessary to check the evacuation by a few drops of laudanum in each dose.

Although the many frivolous arguments which long prevailed against the use of the bark are now obviated by the united consent of the ablest physicians, yet there still remains one great prejudice, which prevents its more general exhibition. When a fever has distinct remissions, few physicians will scruple to prescribe it ; but if the disease assume a continued form, every method is tried to bring on regular remissions ; if this cannot be accomplished, and the patient's strength begins to sink, alexipharmics, blisters, and cordials are employed to support him. The use of the bark, at that time, would be thought highly dangerous, and has therefore been cautiously prohibited by almost every medical writer since the days of Sydenham. But, in hot climates, experience affords sufficient proof, that this objection has no manner of foundation, and that the bark may not
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only be given with the greatest safety, both in the remissions and exacerbations, but even when the disease is continual.

III. The diet ought to be of the most antiseptic kind. Ripe fruit answers very well both the intention of food and medicine. The panada, sago, and other diet on board ship should be acidulated, or the drink may be rendered agreeably tart by cremor tartari or elixir of vitriol. If the patient's strength begins to sink, he should be freely supported with wine in his drink, food, and medicines; the patient should be frequently shifted, and his apartment sprinkled with vinegar, and kept as cool and clean as possible. When he longs for cold water, which is frequently the case, it may be allowed him freely, as it will be found the best diluent. Nothing, indeed, in acute diseases, can be more cruel than to refuse a patient the gratification of his strong cravings. Very happy effects often follow from indulging them; and if what is longed for be very improper, there will never be so much of it taken as to do any harm,

harm. On board of ship, porter, punch, cheese, and ham are most frequently desired by the sick in fevers, and, however improper they may appear, I have sometimes seen an allowance of them produce the best effects.

IV. As all the dangerous diseases of hot climates, particularly fevers, depend upon a putrescent disposition in the fluids, the diet at all times, but more especially during the rage of sickness, ought to correct this tendency; for this reason, vegetables should bear the greatest proportion. Violent exercise, exposition to the heat of the sun and night-dews, are to be carefully avoided; for they are such evident causes of sickness in hot climates, that it is very extraordinary, if any escape a dangerous attack who are exposed to them.

Besides these necessary cautions, keeping the stomach clean, a generous use of wine, and taking the bark daily during the sickly season, are the best preservatives.

If such directions were observed, it may with certainty be affirmed, that the

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lives of many Europeans would be saved, who are annually carried off by the diseases of hot and unhealthy countries. But if, through a disregard to regimen, or from being exposed to contagion, the symptoms of fever should be induced, the timely exhibition of a puke will oftentimes rescue the patient from impending danger.

S E C T. IV.

Cases of the Remitting Fever.

IN the former sections having given a description of the remitting fever, made some observations on particular remedies, and laid down the principal indications of cure, I shall now illustrate the whole by the following cases, which are selected from a number faithfully minuted on the spot, and are related nearly in the order they came under observation.

In the treatment it will appear, that little regard has been paid to private opinions or public systems; uninfluenced by any theory, however plausible and ingenious,

nious, it was my constant aim carefully to observe the symptoms of disease, and the effects which medicines produced.

C A S E I.

May 8th, 1768, lat. 13 deg. 29 min. S. Stephen Leven, one of the company's recruits, complained of a head-ach, pain and sickness at stomach. His countenance was flushed, his skin very hot, and his pulse quick and soft. Five grains of the antimonial powder, N^o. 1, were given every hour, with plentiful dilution, which discharged much bile, and sweated him profusely ; he was, however, very restless during the night.—9th. In the morning, his tongue was dry and parched, his skin hot, and his head-ach more violent. As he was costive, he had a dose of salts, which purged him thrice. At night, his fever still continued. One quarter of the antimonial powder was prescribed.—10th. In the morning, his tongue was more foul, he was troubled with great inquietude, and his pulse was 108 in a minute. The powder was continued every three or
four

four hours, with two spoonfuls of the Mindereri julep ; his medicines sweated him, and at night he appeared to be easier, but soon became delirious.

In the morning of the 11th, his pulse was 100, his tongue was covered with a brown dry crust, his countenance livid, and his skin very hot. His medicines were repeated every six hours, and a little white wine was allowed in his drink. At night his skin was still very dry and hot, his pulse was more accelerated, he had a slight stupor, and was again disposed to rave. The pediluvium was used, a blister was applied betwixt his shoulders, spirit of nitre was added to his drink, and two spoonfuls of the camphorated julep prescribed every four hours.—12th. He raved very much during the night, and his julep occasioned a slight nausea. In the morning his skin was hot, but clammy ; his pulse small, quick, and feeble ; and he was troubled with slight subsultus tendinum. Two ounces of the bark decoction, N^o. 8, were prescribed every hour, and he was allowed red port in his drink ;
his

his medicines sat easy on his stomach, but he had a very restless night.—In the morning of the 13th, he was very sensible, had a gentle moisture on his skin, but his pulse was very weak and feeble. Two scruples of bark in red wine were given every two hours, and toast and water, with a little port, was ordered for his drink. He took his medicine five times, in the evening his pulse was more firm; and he had some rest in the night.—14th. In the morning his pulse beat 90; he was in equable diffused sweat; but his tongue was still rough and dry. At night, petechiæ appeared on his arms.—On the 15th and 16th, little or no alteration could be observed.—On the 17th, he was free from feverish symptoms; the petechiæ were gone; but he was very feeble and giddy. The bark and wine were continued for some time longer; however, it was several weeks before he recovered his usual strength.

Another of the recruits was seized with the fever, about the same time. On the third day, the bark was prescribed, al-

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though no distinct remissions could be perceived, and he was soon restored to health.

C A S E II.

May 28, 1768, lat. 34 deg. 47. min. S. Thomas Sparks, aged about twenty-six, of a strong healthy constitution, and who had never before been in a warm climate, was seized with head-ach, alternate flushes of heat and cold, and pains in his back and limbs. These symptoms were succeeded by drought, restlessness, and oppression; but his pulse was very little accelerated. The following was given:

℞ Pulv. ipecac. gr. x.

Tart. emet. gr. ii. m.

This operated very well, and relieved him greatly. In the afternoon he went to bed, and was sweated with warm sage-tea, and spirit of hartshorn.—29th. On the morning he found himself able to walk about; but he was still feeble and oppressed, and complained much of head-ach. The bark was prescribed; however, he went about drooping some days longer, and neglected

his medicine.—June 1. In the afternoon, he was seized with slight rigors, which were succeeded by heat and drought, and he had a very restless night.—2d. In the morning, when he sent for me, he complained of very severe head-ach, his skin was exceedingly hot, his tongue parched, and his pulse very small and quick. Half the powder, N^o. 1, was prescribed every four hours, which operated well, and relieved him considerably. In the night, the powders purged him frequently, and he imprudently went out into the open air.—3d. In the morning, the feverish heat was greatly increased, and his head-ach was almost insupportable; but his pulse, though quick, was very small. Powders, with camphor and nitre, were prescribed, which only forced a partial sweat; and in the night he became delirious.—4th. In the morning, his skin was intensely hot, his eyes looked dull and heavy, his pulse was very quick and feeble, and he had a considerable degree of stupor. His feet were bathed in warm water, blisters were applied to the ankles,

wine was allowed in his drink, and two spoonfuls of the camphorated julep were prescribed every two hours. At night, he was pretty sensible.—The 5th, no alteration. His medicines were continued, and the pediluvium used.—6th. The stupor and insensibility rather increased, and his pulse flagged much. At night, his countenance was wild and staring, and he was troubled with subfultus tendinum. A large blister was applied betwixt his shoulders, the camphorated julep was continued every four hours, and the following bolus was given at bed-time :

℞ Theriac. Venet.

Castor Ruff. aa gr. xv.

Sal succin. gr. v.

Syr. simp. q. s. m.

He was delirious in the night. Towards the morning he had a partial sweat.—7th. His tongue was very black and crufted, the subfultus tendinum more frequent; he dozed much, and was insensible.—Two ounces of the decoct. serpent. Ph. Edin. were prescribed every three hours, and wine was given freely.—8th and 9th, he con-

tinued

tinued his medicines ; however, they occasioned no alteration.—On the 10th, the stupor and insensibility increased much, with picking at the bed-clothes. One of James's powders was given, and repeated a second and third time, which only forced a clammy moisture on his neck and temples. At night, his pulse was very weak, and so quick that it could not be numbered. Sinapisms were applied to his feet, and a spoonful of the cordial julep, N^o. 8, was prescribed frequently, as he could still swallow.—The 11th, he lay comatose and senseless, and was covered with cold clammy sweats. The sinapisms were repeated, but had no effect in rousing him.—12th. The subfultus tendinum and picking at the bed-clothes were more frequent, and he could swallow nothing but a little wine and water. These symptoms increasing, his extremities became cold, his pulse failed, and he was carried off by convulsions in the afternoon of the 14th, without a single symptom of putrescency, or any evident marks of a dissolved state of the blood.

C A S E III.

July 18th, lat. 14 deg. 10 min. N.
Worthington Price, serjeant, never before
subject to any disease, except an obstinate
ague, which he contracted by a short re-
sidence in a fenny county of England,
was seized at night with a feverish pa-
roxyfm, which terminated in the morn-
ing by a profuse sweat.

Next day, when I first visited him, he
complained of weariness, head-ach, and
low spirits; his tongue was white and
foul, and his pulse small and feeble. An
antimonial puke was exhibited, which
operated well; but in the morning, the
feverish paroxysm returned. Two drams
of antimonial wine, mixed in a pint of
warm sage-tea, were prescribed at sepa-
rate draughts, which soon procured a
plentiful sweat.

On the morning of the 28th, he was
free of fever, but complained of great
prostration of strength, and was very
much dejected. His ague being formerly
removed by the Peruvian bark, and suc-
ceeded

succeeded by obstinate rheumatic pains, from prejudice, he refused taking any of this medicine; but said he was willing to follow any other directions which might be judged proper; therefore, in order to disguise the bark as much as possible, it was prescribed in the following form:

℞ Aq. Menth. Sat. ℥viii.

Pulv. cort. Peruv. ℥vi.

Succ. limon.

Sp. vin. Gallic. a ℥i.

Sach. alb. ℥ss. m.

Cap. unciam secunda quaque hora.

This sat very easy upon his stomach; but in the night he had an accession of fever. Next day his head-ach became more severe, and he complained of giddiness when he attempted to walk; being unfortunately told, unless he took the bark more regularly, and in larger doses, he could not expect to get soon better, he absolutely refused taking any more medicine.

On the 24th, he was obliged to confine himself to his hammock. When I visited him, he was very hot and feverish;

his tongue was dry and furred, and he was troubled with head-ach, anxiety, and oppression. One half of the powder, N^o. 1, was repeated every four hours, which operated well. At night he was in a profuse sweat, and his pulse was more full and soft.

In the morning of the 25th, he had a pretty distinct remission. Two scruples of bark were prescribed in a saline draught; but when he discovered the medicine, he refused it. In the afternoon, the feverish paroxysm returned; his feet were bathed in warm water, and the saline julep was prescribed. He was delirious in the night.

The 26th, in the morning, he was sensible, but his skin continued hot and dry. Two ounces of the decoct. serpentariæ were prescribed every three hours. In the night, he rested well, and sweated freely.

On the 27th, he continued calm and easy through the day, and took his decoction regularly, but could not be persuaded to have recourse to the bark. In the night, his fever returned; he was very de-

delirious, got out of his hammock, and ran upon deck.—28th. His pulse was very quick, his skin intensely hot, and the delirium remained. His feet were bathed, his head shaved, a blister applied betwixt his shoulders, and two spoonfuls of the camphorated julep, with *sp. Mindereri*, were prescribed every two hours.—29th. No alteration. *Perg.*—30th. He both comatose and delirious. His medicines only occasioned a partial sweat; blisters were applied to his ancles, and wine was prescribed freely. *Perg.*

The 31st, very little alteration. *P.*

August 1. The coma and delirium continued, his lips and teeth were covered with a glutinous crust, and his breath was very offensive. A strong decoction of bark was prescribed, but was swallowed with difficulty. Sinapisms were applied; and he was supported with wine. Next day, no alteration.

The 3d, large livid spots appeared on each foot, his pulse was exceedingly quick and feeble, his countenance horribly ghastly, and his stools very offensive.

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The bark was tried in glysters, but was not retained. The following days he lay stupid and insensible, continually muttering to himself, and picking at the bed-clothes. All medicines were laid aside, yet he protracted a miserable existence to the 8th, when his body, soon after death, emitted a very cadaverous smell.

C A S E IV.

July 23d, lat. 4 deg. 49 min. S. John Vickarie, one of the company's recruits, aged eighteen, in the evening, was seized with rigors, head-ach, and pains in his back and loins; he soon became hot and drougthy, and passed a restless night.— 24th. In the morning, when I first visited him, his pulse was 100, his countenance much flushed, his skin very hot, and his thirst insatiable; he complained of sickness at stomach, and vomited much bile. A grain of tartar emetic was given at separate draughts, which operated easily. At night, his fever returned with violence; all the former symptoms were aggravated, particularly the pain at the stomach and bilious vomiting. A grain of solid opium

was given, and a saline draught was prescribed every two hours in the act of fermentation. He was troubled with the greatest inquietude in the night, and his stomach rejected every thing he drank.

The 25th, in the morning, his fever continued, the nausea and pain of his stomach were very severe, fomentations were applied, and the draughts repeated, which procured him some ease. At night, the feverish paroxysm run very high, the pain of his stomach was almost insupportable, with incessant vomiting of bile. The pediluvium was used, a cataplasm with theriac, camphor, and three drams of laudanum, was applied to the stomach. Soon after this, the pain abated, and he slept for an hour. When he awaked, he called for cold water, which was allowed him in small draughts. In the night, he was restless, drank plentifully, and fell into a sweat towards the morning.

On the 26th, he had no distinct remission, his skin continued hot, his countenance was gloomy, and his eyes were of a yel-

a yellow colour. Two ounces of the bark decoction were prescribed every two hours, which sat easy on his stomach. In the evening, he had a loose stool, and the feverish heat encreased. His feet were bathed in warm water, wine was added to his lemonade, and his medicine was continued. In the night he was delirious, but became calm towards the morning.

The 27th, when I visited him, a gentle moisture was diffused over his skin, but his pulse was small and fluttering. His countenance was exceedingly ghastly, neither was he perfectly sensible. Two scruples of the bark were prescribed every hour. In the afternoon his pulse was better. As the bark had a tendency to run off by stool, laudanum was added.

On the 28th and 29th, his fever abated, and in three days more totally left him.

After this, he was seized with an excruciating pain in his right hip, which was removed by the application of a blister. He continued the use of the bark for some days longer, and soon recovered his usual health and colour.

C A S E V.

July, 1768, lat. 6 deg. 33 min. S.
Mr. Grant, a cadet, aged about eighteen, for two or three days, had been indisposed with a head-ach, want of appetite, and low spirits. On the morning of the 22d, he was seized with alternate flushes of heat and cold, and pains in his back and limbs. These complaints were succeeded by head-ach, hot skin, and profuse bleeding from the nose. A dose of cream of tartar and manna was prescribed, which procured him two stools.

On the morning of the 23d, his skin was still hot, his countenance pale, and his tongue foul and white; he had no considerable drought; and his pulse was small, but scarcely quick. The following was prescribed every three hours:

℞ Docost. cort. Peruv. ℥ii.

Sp. vitriol. ten. gutt. x.

On the 24th, he complained much of head-ach, giddiness, and oppression; his tongue was very dry, his skin hot, and his pulse 100. His medicine was continued,

nued, and lemonade with wine was prescribed for his ordinary drink. At night, the inquietude was greater; his feet were bathed in warm water.

The 25th, in the forenoon, he was again attacked with the hæmorrhage from the nose, which was soon stopped. The blood was very thin, and scarcely tinged the cloth. His pulse became more quick and feeble, and he was very dejected. As he had an aversion to the bark in substance, the draughts were continued as before.

26th. The same, only his tongue was more foul, and his teeth crufted. P.

27th. No alteration. P.

28th. Towards night, he was comatose and dosed much, and had another attack of the hæmorrhage. The following was prescribed :

℞ Theriac. Venet. ℥i.

Sal. succini.

Camphor. aa gr. iii.

He sweated some in the night, but had little or no rest.

On the 29th, the heat of his skin continued; his pulse was small and quick,

and his breath very offensive. The bark decoction was again prescribed; and as he was costive, a glyster was injected in the evening. However, in the night, he was delirious.

On the 30th, he was comatose and sleepy. He took the bark decoction and wine freely. At night, no alteration; a blister was applied betwixt his shoulders.

The 31st, he still continued comatose; his pulse was a little better, and the bark decoction was repeated, with a few grains of the powder in each dose.

August 1st, he was very sensible; his pulse began to rise; his blister was dressed, but digested ill. P.

On the 2d, he was pretty easy. As the bark purged him, a few drops of laudanum was added to each dose.

On the 3d, he continued to recover; he had no appetite, but a great craving for wine; it was allowed him freely, and he persisted in the use of his medicines. After this, his appetite began to return, and he recovered gradually.

On the 10th, he fell into a purging, which was removed by a few doses of

rhubarb and diascordium. As he was still weak, the tincture of bark was prescribed twice a day.

On the 27th, he was able to go to Calcutta.

The seven following cases are selected those which happened at Bengal.

C A S E VI.

Culpee, 1768. Henry Pope, seaman, a young man of a very strong and healthy constitution, was sent, on the 30th of August, along with some others, to assist the Ankerwyke, that passed us in great distress, in her way to Calcutta. The people were employed at hard work, constantly relieving one another at the pump.

On the 3d of September, he was seized with sickness at stomach, violent headache, and bilious vomiting, which obliged him to retire from his duty. When he asked for medical advice, he was ordered to return to his labour, with a hint that his disease was only the effect of drunkenness.

ness. Next morning he found himself a little easier; but the head-ach still continued, and he was very weak and feeble. Being affronted at the judgment passed upon him, he made no farther complaints, and was sent with his ship-mates in a boat to return to Culpee. In the afternoon, he was again seized with fever, great agony at stomach, incessant vomiting, head-ach, and drought.

September 6th. On the evening, when I first saw him, he complained of the most acute pain at the stomach, which was swelled, and very painful to the touch. His head ached violently, his tongue was furred, his countenance yellow and ghastly, and his skin was cold and clammy. He was ordered some warm wine and water, which he immediately rejected with a strong hiccup. A grain of opium and fomentations were prescribed. After this, his skin became warm, but his pulse was small and fluttering. In an hour, the vomiting returned as violently as ever, and he had two purging bilious stools. He drank some warm

camomile tea to cleanse his stomach ; a saline draught, with laudanum, was prescribed at bed-time, and the following was left to be taken in an effervescent state during the night :

℞ Aq. menthæ simp. ℥iv.

Sal tart. ℥i.

Sach. alb. ℥ss. m.

Cap. cochlear. i. cum q. s. succ. limon.
urgenti nausea.

During the night, he vomited and purged frequently.

On the morning of the 7th, his skin, but particularly his temples, felt very hot ; his countenance was wild and staring, and his tongue very brown and parched. Two ounces of the following were prescribed every hour :

℞ Decoct. tamarind. ℥xii.

Mann. ℥i.

Tart. emet. gr. i.

In the afternoon, he had three easy stools ; but the pain in the stomach, and over the whole epigastric region, continued as violent as ever. His skin was more cool, and his pulse better. A grain of opium

was given, an anodyne cataplasin applied to his stomach, and a strong decoction of bark was left with his attendant, to be taken as often as his stomach would bear.

In the morning of the 8th, he was insensible at times, and complained of great pain all over the epigastric region. His pulse was very small, quick, and fluttering; his skin hot and clammy; and he frequently applied his hand to his temples. An emollient glyster was injected, his head shaved, the fomentations repeated, and the saline draughts were prescribed, as the bark would by no means sit upon his stomach. Through the day he had several bilious stools; his pulse was irregular, and his skin clammy. He was frequently very sensible, and made rational answers; but, in a moment, he would stare wildly, and become very delirious. His feet were immersed in warm water and vinegar. At night, he was very sensible; his belly was still swelled; and he complained of great pain in the region of the liver. The sa-

line draughts and fomentations were continued, and a blister applied to the part affected. In the night he raved much, and purged very frequently.

The 9th, in the morning, he had short intervals of sensibility, and complained of the most excruciating pain in his stomach and in the region of the liver. The fomentations were continued, and he took the following at separate draughts.

R. Decoct. tamarind. ℥vi.

Sal cathart. ℥iii. m.

Through the day, he was, for the most part, insensible, and covered with cold clammy sweats. In the afternoon, when I visited him, his breath was very foetid, and he had two offensive stools. The bark decoction was again prescribed, which now sat upon his stomach. At night, he seemed very calm, quiet, and sensible, but, in an instant, would talk very incoherently, and his face became convulsed. These fits returned frequently, and were succeeded by a delirium, which continued through the night. The bark decoction with laudanum was prescribed.

The 10th. On the morning, he was again very sensible; but his skin was clammy and moist, his pulse weak and fluttering, and he was troubled with frequent subsultus tendinum, tremors, and strong hiccup. The bark decoction, with laudanum was continued, and he was supported with wine; however, every thing he took was soon carried off by stool. The mortal symptoms encreasing, nothing farther could be expected from medicines, which were therefore laid aside. At seven o'clock, his pulse failed, he lay speechless, and was carried off by convulsions at night.

C A S E · VII.

September 8th. Thomas Bullman, carpenter's mate, aged twenty, was seized in the morning with rigors, head-ach, and sickness at stomach. These symptoms were soon succeeded by heat, drought, and restlessness; but his pulse was feeble, and little quicker than natural. An antimonial puke was prescribed, which discharged much bile. At night,

the feverish accession returning, half the powder, N^o. 1, was given at bed time; he rested ill in the night, but towards morning fell into a profuse sweat.

The 9th. When I visited him, he was pretty free from fever, but his head-ach still continued, and he was weak, feeble, and giddy. At noon, he was seized with slight rigors; and, as the paroxysm advanced, he turned excessively hot, puked up gall, and was disposed to rave. The ptisan, N^o. 2, was given, which operated upwards and downwards. At four, a dram of bark was prescribed every two hours, which sat well upon his stomach. Through the rest of the day his pulse was almost natural, but the head-ach and pain of his back were very uneasy. P. He had little or no rest in the night.

In the morning, he was free of fever. As he had only taken two doses of bark in the night, two drams were exhibited at eight; and a dram was continued in red wine every two hours. He took an ounce by night, and had no exacerbation of the fever.

The 11th and 12th. He was free of fever, but weak, feeble, and giddy. The bark was still continued. From this time, I did not visit him; he gave over his medicines, and soon suffered a relapse.

20th. In the morning, I found him confined to his bed; he was much exhausted, and complained of great head-ach and a troublesome cough; his countenance was very ghastly, and he had not the least appetite. A vomit was prescribed, which discharged a considerable quantity of viscid bile. At night, his skin became hot and clammy, his cough was very uneasy, and he puked up some ropy phlegm. A dose of the elixir paragoric. was prescribed at bed-time; however, he passed a very restless night.

21st. In the morning, his skin was cool; he complained of a head-ach, and the cough still continued. Wine was prescribed freely, and he took a dram of bark every two hours. At night, the cough remitted, and the feverish paroxysm returned. The anodyne draught was repeated. He sweated much in the

night, the cough was again troublesome, and he got little rest.

On the 22d, he was pretty easy, but very feeble. The bark was continued, and his drink was acidulated with spirit of vitriol.

23d. In the afternoon, he was very hot and restless, his cough increased, and he became sick at stomach. The vomit was repeated. P.

After this, he began to recover daily; the hectic heat and cough disappeared. The bark, however, was continued for some time longer, and rhubarb was occasionally given, as he became costive.

On the 29th, his complexion and appetite began to return; but it was the end of October before he was fit for duty.

C A S E VIII.

September 10. Joshua Archer, gunner's mate, in the morning was suddenly seized with violent head-ach, sickness at stomach, and pains above his eye-brows. His countenance soon became flushed, his pulse full and strong. The heat of
his

his skin was very considerable, and he continually vomited up bile. He was blooded; but when six ounces were taken, his pulse began to flag. The emetic powder, as in the above case, was prescribed. The pain of his stomach was relieved, but he grew more restless; his head-ach became almost insupportable, and his skin very hot. At night, his pulse was 115. The pediluvium was used, and an antimonial draught was prescribed.

On the morning of the 11th, he had a very severe accession of fever, with pain and sickness at stomach. He took four doses of bark.

The 12th, the feverish paroxysm returned, at three in the morning. When I visited him, he was in a gentle moisture; his tongue was foul; his pulse small, quick, and feeble; and he complained of great head-ach and giddiness. The bark sat easy on his stomach; but by night he had only taken five drams.

On the morning of the 13th, he had a slight paroxysm, but would not be prevailed

vailed upon to take his medicine regularly. His fever returned in the night. Next day, he took six drams of the bark, and, on the 15th, was free from every complaint, except weakness.

On the afternoon of the 21st, he was seized with a feverish paroxysm, much more severe than ever. When I saw him, in the morning of the 22d, he was in a profuse sweat, but complained of head-ach, and said he had suffered so much in the night, that he would now willingly take any medicine. The bark was again prescribed every three hours.

On the 23d, he complained of a cough, and had a slight pain in his right side. The bark was continued, with a few grains of rhubarb, and he seemed to recover fast.

On the 28th, he was feverish, much dejected, and the pain under the right hypochondrium was troublesome. A blister was applied to the part affected; the bark was continued three times a day, with a cupful of the following infusion :

R Flor.

℞ Flor. chamæm. ℥ss.

Sal tart. ʒi.

Aq. bullent. ℥viii.

Infunde per duas horas, et cola.

On the 31st, he was cool ; the cough and pain in the side were removed ; and he was able to go about. He continued his medicine for three days more, and, though weak, returned to duty.

C A S E IX.

September 13th. James Hutton, seaman, aged twenty-five, of a strong constitution, in the morning, was seized with giddiness, head-ach, violent pain at the pit of the stomach, and fell down in a fainting fit. As he continued insensible for some time, a vein was opened ; when four ounces of blood were drawn, he came to himself, and complained of great weakness and violent head-ach. He had a reaching to vomit ; his pulse soon became more full, and his countenance flushed. The ptisan, N^o. 3, was prescribed. About eleven, the paroxysm was greatly increased ; the heat of his
body

body became intense, he was very restless, had slight subfultus tendinum, and seemed disposed to rave. His medicine discharged much bile by vomit and stool, and sweated him profusely. At night, he was easier, but still complained of great feebleness and head-ach.

On the morning of the 15th, he had a feverish paroxysm, with great inquietude and drought; his pulse was 100, and his tongue was foul and dry. The purging ptisan, No. 4, was prescribed, which operated several times. In the afternoon, a profuse sweat relieved him considerably. A draught, with two ounces of the bark decoction, and a scruple of the powder, were prescribed every hour, which sat easy upon his stomach. P.

15th. He passed a very restless night; however, he continued his medicine, and, towards the morning, had a purging bilious stool. When I visited him, his skin was cool, but clammy; his pulse small, but very little quicker than natural; his breath was offensive, and his countenance fallow and dejected. A dram
of

of bark was prescribed every hour and a half, in a glass of red wine. At night his pulse was better, and he was in a warm sweat, and had taken seven doses of his medicine.

The 16th, in the morning, though weak and feeble, he was perfectly free from fever. The bark and wine were repeated every two hours. He continued its use, thrice a day, for some time longer; his appetite began to return; and in a fortnight he was fit for duty.

C A S E X.

September 16. ———, of a weak and delicate constitution, long subject to a train of nervous symptoms, for which, in his own country, under the direction of an eminent physician, he had tried every remedy in vain. As the only remaining resource, he was advised a long sea voyage and a warm climate, which soon relieved his former complaint. Being in the way of infection, on the 16th of September, he was seized with the common

mon symptoms of fever; he went to bed, and drank some warm tea, and vomited abundantly. In an hour, the feverish paroxysm increased exceedingly. A grain of emetic tartar dissolved in rice-gruel was taken at separate doses, which sweated him very profusely; but as no remission followed, one half of the powder, N^o. 1, was prescribed at bed-time; he continued restless through the night, his head-ach increased, and he was disposed to rave.

On the morning of the 17th, his skin was cool, his pulse pretty natural, but he still complained of great oppression, head-ach, and faintness. The electary, N^o. 6, was given every hour. In the afternoon, he had two stools, which occasioned a great dejection of spirits; his medicine was therefore changed, and a dram of bark prescribed every two hours; however, in the night, he had another accession of fever, and continued restless; but, towards morning, he fell into a profuse sweat.

On the morning of the 18th, he was free from fever, but very weak, feeble, and giddy. His arms and breast were full

of milliary eruptions. Being confined to a small apartment from the first attack, he was removed to the great cabin, where enjoying a more free air, he found himself instantly relieved. Fearing another attack of his fever, he took two drams of the bark in the morning, and a dram regularly every hour, till an ounce and half were used. This large quantity sat easy upon his stomach, and procured one copious stool.

On the morning of the 19th, he was pretty free from every feverish symptom, but was still very feeble and faint. About mid-day, he was seized with dimness of sight, saw objects double, his mouth and jaws were affected, and he faltered in his speech. These having formerly been symptoms of his nervous complaint, did not much alarm him. The bark and wine were continued every three hours, and, at night, he found himself perfectly easy, though weak. From this time, the fever left him; but he fell into profuse sweats, his appetite did not return, and he was troubled with acidity and low spirits.

spirits. For these complaints, he took magnesia, asa foetida, bark, and bitters. He used the cold bath, and in a month was restored to his usual health.

C A S E XI.

September 24th. William Johnston, seaman, a young man of a delicate constitution, who had never before been in a warm climate, in the morning was seized with head-ach, sickness at stomach, and vomiting of bile, which he encouraged by drinking warm tea. At ten, when he sent for me, he was in great agony from the pain in his stomach, and was possessed with the greatest fear of dying immediately; his countenance was flushed, his skin exceedingly hot, and every thing he drank was rejected. Fomentations were applied, and a grain and a half of solid opium was prescribed. In an hour and half, the pain of the stomach remitted, but the feverish paroxysm increased. The ptisan, N^o. 2, with only one grain of tartar emetic, was ordered in separate draughts, which discharged abund-

abundance of bile upwards and downwards, and sweated him profusely. At night, his skin was cool, and his pulse pretty regular; but when out of bed, he was feeble and giddy. Two ounces of the bark decoction were ordered every hour.

The 25th, in the beginning of the night, he had some rest; in the morning, the feverish paroxysm returned, and he vomited frequently. When I saw him, he was was in a clammy sweat, the nausea, anxiety, and restlessness still continued, with a fullness at stomach, and aching above his eye-brows. He took the prescription, N^o. 4, and, without waiting for the full effects of the medicine, a dram of bark was given every two hours, in red wine. At night, he had three stools; he was weak, feeble, and faint. The bark was prescribed every hour.

The 26th, as he was afraid of another attack, he took his medicine six times in the night. In the morning, his skin was cool, and he was free of head-ach, but complained of great feebleness and giddi-

P

ness,

ness, when in an erect posture. The bark was continued every four hours, with wine; the return of the fever was prevented, and he recovered daily.

In the beginning of October, he was seized with the dysentery, which was very frequent on board. As I did not attend him, I do not know how he was treated.

On the 12th, being sent to the hospital, he died in his passage to Calcutta.

C A S E XII.

October 18th. Mr. M—, aged twenty-two, after attending a sale of clothes, belonging to some deceased gentleman, and walking home in the heat of the sun, was seized with slight chilly fits, head-ach, and sickness at stomach. His skin soon became hot, his countenance flushed, the pain of his head increased, with difficulty of breathing, and heavy sighs. Half the powder, N^o. 1, was given every hour, which operated well. In the night, all his complaints increased, the paroxysm ran high, and he became delirious.

On

On the morning of the 19th, he was sensible, but still complained of head-ach, pains in his back, drought, oppression, and inquietude; his tongue was foul, and his pulse 100, small, and quick. As he refused the bark in substance, two ounces of the bark decoction were prescribed every hour, but having an aversion to the medicine he did not take it. In the afternoon, his skin was very hot, his pulse 115, and the paroxysm became violent. Five grains of the powder, N^o. 1, were given in a saline draught, and the pediluvium used. At night, he was delirious. His medicine was repeated, and the bark left with his attendants, to be given as often as he could be prevailed upon to take it.

On the morning of the 20th, his skin was pretty cool, his pulse still quick, and his tongue foul and parched; he had a gloomy look, and seemed to be affected with stupor. As he could not be prevailed upon to take the bark, it was changed for the saline draughts. At night, he became very restless, had a

wild countenance, and appeared disordered in his senses ; his feet were bathed, a large blister applied betwixt his shoulders, and a draught, with a quarter of a grain of emetic tartar was prescribed every four hours. In the night, he was very delirious and unmanageable.

On the morning of the 21st, his pulse was small, quick, and fluttering, his skin clammy, his teeth covered with a black crust, and he was comatose and delirious at times ; his breath and all the excretions were very foetid. He was taken out of bed and shifted, and his feet immersed in warm water. The blister discharged well, and was dressed ; the bark was again tried, and he swallowed one dose with great difficulty. Through the day, his pulse frequently varied, and he continued comatose, insensible, and stupid. At night, he had frequent subsultus tendinum. As he now refused every medicine, sinapisms were applied to his soles.

On the 22d, he continued in the same state of insensibility, his tongue was black, his breath exceedingly offensive, and his

blister had a gangrenous appearance. At night, his extremities became cold, his skin was clammy, his stools ran off involuntarily, and, about four next morning, he died in convulsions. His body, soon after death, was covered with livid spots, and the room in which he lay was very offensive, although it was frequently sprinkled with camphorated vinegar.

Mr. L—— having accompanied the former gentleman, whose case is related, was seized at the same time with the fever. After cleansing the primæ viæ, he took the bark in large doses, and soon recovered.

C A S E XIII.

April 9th, 1771, lat. 4 deg. 33 min. N. Henry Castles, gunner's mate, aged thirty-six, brought up to the sea, and never before subject to sickness, last night, at twelve o'clock, was seized with rigors, pains in his back, heat, drought, and frequent vomiting. These complaints continuing, in the morning he took half a grain of emetic tartar. When I saw him, his countenance was flushed,

his skin hot, and his pulse 96; his stomach was tense, swelled, and painful to the touch; he was in the utmost agony, and continually vomited up bile. A grain of opium was given immediately, fomentations were used, and, two hours after, the purging ptisan, N^o. 4, was prescribed. The nausea abated, and he retained the physic, which procured him four bilious stools. At night, he was in a profuse sweat, his pulse was 80, and the pain of his stomach abated. The bark was prescribed, but his stomach did not retain it.

The 10th. At two in the morning, he had a violent accession of fever, with unsufferable head-ach, nausea, and vomiting. At eight, when I saw him, his pulse was very small, quick, and obscure; he complained much of head-ach and giddiness, his countenance was gloomy, and his eyes red and watry; the pain, tension, and sickness at stomach remained. Half an ounce of the sal catharticus was prescribed at two separate draughts; and two hours after, he began the bark decoction,

coction, with the tincture. At night, he had taken six doses of the decoction, and had two purging stools; his stomach was easy, less swollen, and his pulse was more firm. Fifteen drops of laudanum were given in the bark decoction at night.

The 11th. The feverish paroxysm returned at twelve last night. On the morning, when I visited him, his skin was clammy, he complained of great anxiety, drought, head-ach, and disorder at stomach, which was painful and much swelled. Large stupes of flannel were wrung out of a warm fomentation, and applied to the abdomen; the salts were repeated as yesterday, and two drams of powdered bark were added to eight ounces of the decoction, which was given, after the first stool, in as large doses, every hour, as his stomach would bear. At night, he was easy, and the whole of his medicine sat well upon his stomach. It was continued through the night, with a few drops of laudanum to prevent it from running off by stool.

The 12th. He had a slight paroxysm last night, and awaked calm in the morning, but was very weak, feeble, and giddy. A dram of bark was prescribed every two hours in red port; at night, he had taken an ounce, was much easier, and in better spirits. After this, he recovered daily. He was allowed a fresh diet from the captain's table, continued the bark and wine thrice a day, and, on the 26th, though weak, returned to duty.

On the 1st of May, he relapsed; the feverish paroxysm was very severe, attended with great pain and heat at the pit of the stomach, and vomiting of bile; his eyes and countenance became yellow, as in a jaundice. After cleansing the first passages by the prescription, N^o. 4, a grain and a half of solid opium was given, and the bark prescribed every hour in dram doses. By this means, the next paroxysm was mitigated, and his fever totally left him on the 3d. He continued his medicine three times a day to the 6th. Having omitted the bark on the 8th, he was again seized with a feverish paroxysm,

roxyfm, continuing for twenty-four hours, and which was not removed till he took an ounce of the same medicine. After this, his stomach was very weak; his countenance continued fallow; but, by the use of bark, bitters, and rhubarb he was restored to health, and, on the 19th, returned to duty.

C A S E XIV.

June 2d, 1771, lat. 34 deg. S. Robert Lavender, aged about thirty, in the afternoon, was seized with shuddering, and pain in his back and limbs. When I visited him, his skin was exceedingly hot, his pulse quick, full, and soft, and he complained much of head-ach, and drought. The antimonial powder, N^o. 1, was prescribed, which puked him several times. His fever still running high, half a dose was repeated at bed-time.

On the morning of the 3d, the feverish symptoms continuing, the ptisan, N^o. 2, was prescribed, which purged him several times, and sweated him profusely. In the afternoon, his skin, was pretty cool, his
pulse

pulse 90, but he still complained of faintness and head-ach. A dram of bark was given every hour in a saline draught, which sat well upon his stomach. In the night, he had an accession of fever, and omitted his medicines.

The 4th. In the morning, his skin was hot, but a little moist, and his pulse 100; his eyes were red and watry, his tongue and teeth very foul, and he was troubled with the greatest anxiety and restlessness. A dram of bark was prescribed every two hours, and his drink was acidulated with cremor tartari. At four in the afternoon, he had taken five doses of his medicine; his pulse was 115. At seven, he fell into a profuse sweat. —The head-ach continuing severe, his feet were immersed in warm water. At twelve, he still sweated plentifully, the head-ach and drought abated, and his pulse fell to 96. At night, he had taken an ounce of the bark; it was therefore only prescribed every four hours.

The 5th. He sweated and rested pretty well in the night. This day his skin was per-

perfectly cool, his pulse 80, and his tongue white and moist; he had little or no thirst; but complained of giddiness. As the bark began to purge him, he was advised to continue it every two hours with laudanum, which he neglected. At four in the afternoon, he had an exacerbation of fever, with very great heat, head-ach, and drought. At eight, he was in a profuse sweat, his pulse 100. Two ounces of the bark decoction, with five drops of laudanum, were prescribed every two hours.

In the morning of the 6th, he was quite free of fever, the redness of his eyes disappeared; but he was still very weak, feeble, and giddy. In the afternoon, his fever returned; his pulse rose to 100, and his complaints terminated in a sweat. He took six drams of the bark in the day.

On the morning of the 7th, his skin was again hot, his pulse a little frequent. In the afternoon, he had great thirst and was feverish for an hour; but soon after, he fell into a profuse sweat. He took six drams of bark in the day.

Next

Next day, he was free from fever, but was exceedingly weak, giddy, and faint. The bark was continued, and a bottle of red port allowed in twenty-four hours, in his sago, rice-gruel, and drinks. After this, he fell into profuse sweats in the nights, which were removed by the bark and tincture of roses. On the 15th, he was able to return to duty, and soon recovered his strength.

C A S E XV.

July, 4th, 1771. lat. 6 deg. N. John Connor, one of the company's recruits, who was never before in a warm climate, on the 2d of the month, was seized at night with chilness, which was succeeded by violent head-ach, drought, quick pulse, and other symptoms of fever. He got a few doses of the antimonial powder, N^o. 1, which sweated him profusely. Next day he was free from fever.

On the morning of the 4th, when I first saw him, his skin was moist and cool, his pulse was 90, his tongue was foul
and

and furred, and he complained of great giddiness and head-ach. Two scruples of the bark were prescribed every hour in red wine, which sat easy upon his stomach. At four in the afternoon, his skin became very hot, and his pulse beat 112 in a minute, soft, and small. At night, he was in an equable sweat, his pulse fell to 84, but he looked very stupid. He took half an ounce of the bark.

The 5th. About one in the morning, he had two purging stools, was delirious, and refused his medicine. When I saw him, his skin was moist, his pulse was 80, soft, and full; he was very sensible, complained of great head-ach, and had strong pulsations in the carotid arteries. His head was shaved, the pediluvium used; the bark was continued every two hours in the saline draughts, with a few drops of laudanum, to prevent it from running off by stool. At eleven p. m. his head-ach was more severe; his pulse quicker and more feeble, and he seemed to be slightly affected with stupor.

6th

6th. He dosed some in the night, but had no refreshing rest. In the morning, he was perfectly sensible, but the head-ach and pains in his temples remained; his pulse was 96, his tongue foul, black, and furred. His temples were bathed with oxycrate, the pediluvium was used frequently, and the bark was regularly continued. He was in a gentle moisture through the day; at night, he was free of head-ach; his pulse was 84, very regular and soft; he rested very well in the night, and continued quite calm and free of fever.

On the morning of the 7th, he was weak, feeble, and giddy, when out of bed. Port was allowed, and the bark was repeated every three hours.

The 8th. He continued to recover.

On the 9th, he went upon deck, and had a return of his head-ach and fever, which soon disappeared by the use of the bark.

After this, he was allowed a fresh diet, and was soon restored to his usual strength.

C A S E

C A S E XVII.

Lat. 6 deg. 41 min. N. Robert English, carpenter's mate, aged twenty-three, very liable to fevers of a few days standing, when in a warm climate, on the 27th of August, 1771, was seized with chilnests, violent pain in his head, back, and betwixt his shoulders, and alternate flushes of heat and cold continuing most part of the night. Four days before this, he was blooded, and took two doses of salts, on account of an inflammatory gonorrhœa.

On the 28th. When I was first made acquainted with his complaints, his skin was intensely hot, his head ached violently, his tongue was dry and parched, his pulse was 112, pretty strong, but soft. Half the powder, N^o. 1, was prescribed every three hours, which discharged much bile and sweated him profusely.

On the morning of the 29th, he was still exceedingly hot and feverish. As the antimonial had not procured him a stool, a dose of salts was ordered, which operated

rated well and relieved him considerably. About eleven at night, the feverish paroxysm returned with great violence, during which he complained of great inquietude; his pulse was 90, feeble, and oppressed; his feet were bathed in warm water, and lemonade was ordered for his common drink.

On the morning of the 30th, all the symptoms were mitigated, his pulse returned to its natural standard, and he only complained of great prostration of strength. A dram of Peruvian bark was prescribed at nine, which sat easy upon his stomach. In an hour, the feverish paroxysm returned, his head-ach became unsupportable, the muscles of the scapula, and almost universally over the body, were affected with spasmodic twitches; his pulse varied much, was sometimes 90, sometimes 115, small, soft, and feeble. As he was in the greatest agony, a dose of laudanum was given. After the use of warm fomentations, he fell into a profuse sweat, and found himself easy; he continued the use of the bark, and before night had

had taken about an ounce. About two in the morning, he had another accession of fever, which continued three hours, during which time his stomach rejected the bark.

On the morning of the 31st, he had a very distinct remission, his pulse was 86, his tongue was sore and covered with a black crust, and he complained of the greatest prostration of strength and dejection of spirits. A dram of the bark was continued regularly till twelve, when he was seized with the most violent head-ach; his eyes became dull and heavy, and his skin very hot; his pulse was 96; he had continual twitches of the muscles of the neck, tremors, and subfultus tendinum, and complained of dimness of sight. His feet were bathed, a blister was applied to the head, an opiate prescribed, and the bark was repeated, which sat well upon his stomach. The symptoms rather became more violent; his feet were frequently immersed in warm water, and he continued sensible. About nine at night, his head-ach re-

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mitted, he saw distinctly, and his skin was moist, but the tremors still remained in a slight degree. As he had taken a large quantity of the bark in the day, two spoonfuls of the camphorated julep were prescribed every two hours.

September 1st. Towards the morning, he sweated profusely, and when I visited him, he was free of fever, but was exceedingly weak and faint; his breath was offensive, and his tongue dry and black. He was allowed port wine; and, in order to prevent another attack, he willingly continued the use of the bark. By twelve at night, he had taken ten drams, and was disposed to sleep. He rested well in the night.

On the 2d, his skin was cool, and he had little or no head-ach, but complained of giddiness and dimness of sight, when he moved out of his hammock. He eat some pumkin tart at dinner, and took a dram of the bark regularly every four hours.

For the three following days, he kept recovering.

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On the 7th, at night, when the weather was very close, he went upon deck, but was immediately ordered below.

From this to the 12th, he drooped much, was very low spirited and dejected, and could not be persuaded to take his medicine.

On the 13th, his fever increased, his pulse rose to 100, his tongue became sore, stiff, and swelled, and aphthæ appeared in his throat.

On the 14th, a black crust fell off from his tongue, and exposed to view several small ulcers. A gargle, with honey and barley-water, was prescribed.

From this to the 16th, little alteration happened, although he took from three drams to half an ounce of the bark daily.

On the 16th, he again appeared to be free from fever, but was exceedingly extenuated, and reduced to the greatest pitch of weakness. The aphthæ in his mouth, and the foreness of his tongue remained. He was allowed wine freely, which now he did not relish; therefore, he was indulged in his desires, whether he called

for a little punch or porter. He continued the bark, taking about three drams every day.

On the morning of the 19th, he was taken out of bed, conversed chearfully, and seemed to be much better than usual. About eleven in the forenoon, in an instant, he found himself indisposed, and desired to be assisted to his hammock. He was seized with convulsions, his extremities became cold, he was speechless, and had all the appearances of approaching death. A spoonful of cordial julep, N^o. 8, was poured into his mouth frequently, and bottles of warm water were applied to his feet. In three hours, he returned to his senses. After this, he became comatose, and his pulse was very small, quick, and irregular. A blister was applied betwixt his shoulders, the julep was given at times, and he was supported with wine. His strength and spirits seemed now to be too much exhausted to expect any thing from medicines.

From this time, the convulsive fits returned frequently. On the 23d, he
purged

purged a considerable quantity of putrid bilious matter, he lay comatose, insensible, and died in the evening.

Upon opening the abdomen, the omentum was found very much wasted, but what remained of it was found; the liver was in a natural state, and the gall-bladder contained an ounce of dark-coloured bile. All the intestines seemed sound, except the duodenum, which was putrid and corrupted for several inches, and contained some ounces of fœtid matter, resembling a mixture of pus and bile. On examining the encephalon, the meninges, brain, and cerebellum were of a natural appearance, and the cortical and medullary substance was found, and bore handling better than in most subjects; but in the left ventricle there was found about half an ounce of bloody serum. The cavity of the thorax was not examined.

C A S E XVIII.

Canton, December, 1771. Mr. Audley's servant, a young man of a healthy

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constitution, was seized with rigors, pain in his head and back, succeeded by a feverish paroxysm, which did not terminate in a regular remission. His surgeon had given him a puke and purge. He was bled on the 17th, at night, and some doses of emetic tartar were prescribed, which purged him frequently.

On the 18th, I visited him along with Mr. Gowdie, surgeon of the *Horsenden* Indiaman, and we found him in the following condition. His countenance was very gloomy, and his eyes dull, his tongue black and furred, and his throat full of aphthæ; he complained of continual nausea, strong hiccup, and difficult deglutition; his pulse was 120, strong and soft; he had frequent tremors, with *sub-sultus tendinum*. Two ounces of bark decoction, with laudanum, was prescribed every hour, which he retained, and he was ordered weak cinnamon-tea for his drink. At night, his pulse were very small and quick, and he became delirious. The pediluvium was used, and his medicines were continued. He was very insensible

fenfible in the night ; and towards the morning had two purging stools.

19th. In the morning, when we visited him, he lay comatose, but answered questions rationally, when roused ; the aphthæ in his throat appeared more numerous, with a lard-like appearance on the top ; his tongue was swelled and more furred, the subsultus and hiccup continued, and the tears ran off involuntarily ; but his pulse was pretty firm 110. The bark decoction was continued, with half a dram of the powder. At night, he became insensible, his pulse was 118, and he swallowed with difficulty, and continued delirious in the night.

On the morning of the 20th, he lay calm and quiet, his pulse beat 100, the fauces and throat were more thickly covered with aphthæ, and his breath was foetid. The bark draughts, with laudanum were continued, his head shaved, and a detergent gargle was prescribed. At night, his fever ran high, and the hiccup was very strong. The bark decoction was repeated, and the following draught was prescribed at bed-time:

R Mosch. gr. xv.

Sach. alb. ʒii.

Mucilag. g. Arab. ʒi.

Aq. cinnam. ten. ʒi. m.

21st. Towards morning, he purged frequently. When we visited him, he was pretty sensible; but his pulse was still very quick, his skin hot, his tongue dry and black, his teeth and lips covered with a tenacious slime, and the hiccup and subfultus tendinum were more frequent than ever. The musk draughts, with ten drops of laudanum, were continued every six hours, and, in the intervals, the bark decoction was given as before. His medicines sat easy upon his stomach; thro' the day, he was free from hiccup and subfultus tendinum, and at night was in a warm diffused sweat.

The 22d. Last night, he had two purging stools, and was insensible at times. In the morning, he was calm, the hiccup was severe, his mouth was very sore, and he flavered much. As all the excretions were now very offensive, the room in which he lay was kept very cool, and frequently

quently sprinkled with vinegar. The musk and bark draughts were still continued.

From this time till the 25th, I did not visit him; the hiccup and subsultus tendinum were less frequent; mitigations were still observable in the day-time; but at night, the exacerbations of fever always returned, which induced Mr. Gowdie to give him a large dose of opium at bed-time, besides the laudanum in his bark draughts; yet, notwithstanding, the periodical stools in the morning carried off a considerable quantity of the medicines he took in the day.

On the 25th. The aphthæ appeared much more enlarged, his tongue was swelled and ulcerated, the acrid saliva began to corrode the left angle of his mouth, his breath was exceedingly offensive, and his countenance very ghastly.

On the 26th. He purged frequently, and the ulcer in the corner of his lip blooded at times.

The 27th. Petechiæ appeared on his neck and breasts.

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On the 29th. Large variegated spots, like bruises, were observed on his legs and arms; and where blisters had been applied to his ancles, there were slight mortifications.

On the 30th. Sloughs from the aphthæ began to throw off; the salivation still continued; and as the ulcer in the corner of his lip became deeper, and looked worse every day, he was turned on the opposite side. During this time, the hiccup and subsultus tendinum appeared frequently. He took the musk draughts occasionally, continued the bark decoction, with a little powder, regularly; his drink was cinnamon-tea, with red port, and his strength was supported by a very free use of wine in his sago and panado; however, the periodical looseness still returned in the mornings.

On the 31st. The right angle of his mouth began to ulcerate, his tongue was very sore, but his fever was considerably abated.

The 1st of January. The petechiæ began to disappear, the vibices were
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of a better colour, and the aphthæ sloughed off. During these two days, he took an ounce of the bark in powder, and twenty-four ounces of a strong decoction, which he digested well.

On the morning of the 2d, he was seized with a very severe hiccup, and vomited and purged much viscid slime. When we saw him, he was much fatigued with the profuse evacuations; his pulse was small and fluttering; and he was sensible, but exceedingly dejected; the nausea, hiccup, and purging returned with violence. Judging these to be only symptomatic from sordes in the stomach and bowels, half an ounce of the tincture of ipecacoanha was ordered in separate draughts of camomile-tea, which he got over with much gulping, and which brought up a considerable quantity of viscid slime and black sloughs.

On the 23d. His pulse was 84, and he was free from feverish symptoms, but greatly exhausted. The vibices were almost all gone.

On the 4th. In the morning the hiccup returned with violence; he puked

and purged several times, and his pulse was so feeble as scarcely to be felt. The musk draughts, with laudanum, were given, and he was supported with wine. These complaints returned on the 5th.

On the 6th. In the morning, the hiccup increased; he vomited up much black slime, which was very offensive. As the reaching to vomit continued, it was encouraged by a strong infusion of camomile. After this, he was supported with mulled wine; and as his extremities became cold, bottles of warm water were applied to them. The musk draughts, with laudanum, were repeated; the bark draughts sat easy upon his stomach the remainder of the day. At night, his pulse was pretty firm.

7th. The hiccup was troublesome at times, and never entirely left him till the 11th. The musk draughts were repeated occasionally, which always procured sensible relief, and the bark decoction did not run off by stool.

From this time, he gradually recovered; however, his intellects were much disordered,

dered, and he was subject to very ridiculous fancies for some weeks ; but as he regained his strength, his judgment returned.

On the 10th of February, when he sailed for England, his complexion was healthy ; and though still weak, he was in excellent spirits.

During the course of the fever, this patient took above fourteen ounces of bark in powder, and two pounds in decoction.

C A S E XIX.

At Wampoa, Mr. N—, on the 9th of December, 1771, was seized with a regular tertian. The paroxysms were pretty severe ; but, at first, the intervals were distinct. Having undertaken his own cure, by an insignificant prescription recommended by a friend, the ague changed its type, the remissions became imperfect, and it was accompanied with very severe quotidian exacerbations.

On the morning of the 17th, he was seized with slight rigors ; and the paroxysm

roxyfm increased, with great heat and sickness at stomach. When I first visited him, at two in the afternoon, his pulse beat 120, his skin was intensely hot and dry, his tongue furred, he was comatose, and had slight subfultus tendinum. Half the prescription, N^o. 1, was given every hour. The stupor still encreased, and his countenance became wild and staring. At seven, he fell into a profuse sweat, which continued till twelve, but did not terminate the feverish paroxysm. A draught, with twenty-five drops of laudanum was prescribed; and two ounces of a strong decoction of bark was directed to be given every hour in the night, and a dram of the powder, as soon as his stomach would bear it.

At ten next morning, he had taken eight ounces of the decoction and three drams of the powder. He was free of fever, but his head-ach remained. A dram of bark was ordered every hour in red wine, which he continued regularly till night. By this means, a return of the fever was prevented, which, in all
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probability, would have proved fatal ; but, as he was still very weak, half an ounce was taken daily for some time.

On the 22d. He was able to go to Canton, and was soon restored to his usual health.

C A S E XX.

Lat. 34 deg. 52 min. S. John Chankpur, on the 11th of May, 1772, was seized with a feverish paroxysm, which terminated by a profuse sweat. In the remissions, he was free from fever, but was afflicted with very severe head-ach. After the exhibition of a puke, he took the bark in large doses, and returned to duty on the 15th.

After he gave over the bark, he found himself much indisposed, was low spirited, had frequent irregular shiverings and unremitting head-ach.

May 21st. In the afternoon, when I visited him, his pulse was very small and quick, his tongue foul, his countenance fallow, he was weak, giddy, and very low spirited. A gentle emetic was prescribed,

scribed, which relieved him considerably; but as his skin continued hot, the follow-draught was ordered at bed-time:

℞ Aq. menth. simp. ℥i.

Vin. antimon. ʒss.

Laud. liquid. gut. xx. m.

On the morning of the 22d, he was seized with rigors, complained of great prostration of strength and violent head-ach, his pulse was small and feeble, and the heat of his skin below the healthy standard. At eleven, his pulse was 112, very weak and fluttering, his extremities became cold, and he swallowed with difficulty. His feet were bathed in warm water, a large blister was applied betwixt his shoulders, and a spoonful of the cordial julep, N^o. 8, was given frequently. In two hours, he became warm, was in a gentle sweat, but still complained of great head-ach. A dram of bark was prescribed every two hours in red port. At night, he had taken six drams; his pulse was more firm, and beat 100 in a minute.

The 23d. He was pretty free of fever; his blister rose well. The bark was continued;

tinued ; however, at night, his pulse was accelerated, his skin hot, and he had considerable thirst.

On the 24th, his skin was cool, his pulse natural, and the head-ach left him. The bark was continued, and he was allowed a pint of Madeira in the day.

On the 25th. He was free from every complaint, except weakness ; his appetite began to return, and he was gradually restored to health.

S E C T. V.

Diet and Prescriptions.

The following was the diet allowed the sick on board the Talbot :

BREAKFAST.—A pint of rice-gruel, with a sufficient quantity of wine and sugar.

DINNER.—A pint of panado, made with soft bread or powdered biscuit, to which was added a few spoonfuls of wine, and a little sugar.

SUPPER.—As breakfast.

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The usual drinks were toast and water, rice-gruel, or sage-tea, acidulated with lime-juice or cremor tartari. In the low state, they were generously supplied with wine; and when a nourishing diet was judged necessary, the patients had, for dinner, fresh meat, boiled rice, &c. from the captain's table.

P R E S C R I P T I O N S.

N^o. 1. R Tartar. emet. gr. i.

Magnes. alb. gr. xi. m.

Dosis a gr. vi. ad gr. xii.

N^o. 2. R Aq. font. ℥viii.

Tart. emet. gr. ii. ad gr. iv.

Mann. apt. ℥i. m.

Capiat ℥i. singulis horis.

N^o. 3. R Aq. font. ℥vii.

Tartar. emet. gr. ii.

Sal. cathart. ab ℥fs. ad ℥vi.

Succ. limon. q. s. ad gratam aciditatem. m.

Capiat ℥ii. singulis horis.

N^o. 4. R Decoct. tamarind. ℥viii.

Sal. cathart. ℥vi. ad ℥ifs. m.

Capiat duobus vicibus.

No. 5. R Pulv. cort. Peruv. ℥ss.
Coque ex aq. font. ℥xii. ad ℥vi.
Colatur. adde sal. cathart. ℥vi.
Tinct. cort. Peruv. vel
Sp. vin. Gallic. ℥ss. m.
Capiat ℥ii. singulis horis.

N^o. 6. R Pulv. cort. Peruv. ℥vi.
Tart. solub. ℥ii.
Syr. com. q. s. ut f. elect.
Capiat ℥i. secunda quaque hora.

N^o. 7. R Cort. Peruv. trit. ℥ii.
Coque ex aq. font. ℔ii. ad ℔i.
Sub finem coction. adde
Gum. Arabic. ℥iii.
Colaturæ adde
Tinct. cort. ℥ii. m.
Capiat ℥ii. singulis horis.

N^o. 8. R Aq. pur. ℥vi.
Sal. corn. cerv. ℥ii.
Sp. vin. Gallic. ℥i.
Syr. simp. ℥ss. m.
Capiat cochl. i. frequenter pro re
nata.

C H A P. III.

*Of the Colera, Diarrhæa, Dry Belly-Ach,
and Dysentery.*

ALTHOUGH the colera and dry belly-ach are very common diseases in hot climates, and may be termed original ; yet, among a number of patients, before a fever or flux becomes epidemic, these diseases attack indiscriminately. Some are afflicted with the colera, some with the diarrhæa, and others with all the symptoms of bilious colic or dry belly-ach. If these diseases are neglected in the beginning, fruitless straining, gripes, and tenesmus supervene, and the case at last terminates in a true dysentery.

As there is not only the greatest analogy among these diseases, but as they nearly depend upon the same cause, the principal indication of cure in them all is to evacuate the bilious redundancies in the stomach and bowels ; but in doing this, regard must always be paid to the original disease. In a colera, it would be dangerous to give any
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medicines, with this intention, more stimulating than pukes with camomile tea, emollient glysters, and magnesia. After this, the cure depends upon a liberal use of opium.

In the bilious colic, or dry belly-ach, bleeding is sometimes necessary, and the cure, after this evacuation, does not in the least differ from that in the beginning of a flux. The principal intention is to clean the stomach by gentle vomits, to open the belly by mild laxatives, and to appease the pain by opiates, glysters, fomentations, and the warm bath.

S E C T. I.

Description of the Dysentery.

A dysentery, for the first days, frequently resembles a simple purging ; but as soon as the mucus is washed off the bowels, the gripes and tenesmus become violent, and the pulse is accelerated : the stools are small, mucous, and often bloody. The disease, unless its progress

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is prevented by proper treatment, grows daily worse, till it either proves fatal, or becomes in a manner chronic.

In unhealthy situations, when epidemic fevers rage, the dysentery is very dangerous. It begins with great rapidity, and rather seems to be a symptom of the fever than an original disease. This kind of flux has been justly considered by Sydenham, and the most eminent medical writers after him, as the same disease affecting the intestines. But as it greatly alters the type of the prevailing fever, and differs, in some respects, with regard to the cure, I shall give a description of the putrid dysentery which happened at Bengal, during the sickly season, in 1768.

The disease, for the most part, began with lassitude, slight rigors, disorder at stomach, and bilious vomiting. At first, it exactly resembled the fever, but the paroxysm did not run so high; and the patients were not so apt to rave. In a day or two, sometimes later, the dysenteric symptoms made their appearance, and were attended with the greatest prostration

tion of strength and spirits. If there had been any remissions of the fever at first, they now disappeared; the skin continued hot, the pulse was small and quick, the tongue became very foul, and the patients were frequently troubled with hiccup.

When the patient applied early for assistance, the fever and gripes were carried off in a few days; and, in general, the disease was either removed or became chronic. If it happened otherwise, the symptoms were daily aggravated; the tongue became very black, and the teeth were covered with a tenacious slime. The nausea, hiccup, and gripes were very severe; the stools were small, frequent, and exceedingly putrid, accompanied with tenesmus, and sometimes procidentia ani. The frequency of the stools soon reduced the patient to the greatest weakness, and his countenance became inexpressibly ghastly.

As soon as the mortification of the bowels took place, the gripes and other painful symptoms suddenly vanished;

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but the nausea, hiccup, and vomiting still continued. The pulse became small, quick, and fluttering; the stools passed off insensibly, and were intolerably offensive. In all the patients, at this period, subfultus tendinum, tremors, and delirium were added.

At this stage, several vomited a nasty sanious matter, tinging the linen, and bed-cloths black. Some had pustules on the legs, arms, and breast, filled with ichorous matter, which degenerated into black putrid sores.

At last, the pulse failed, the extremities became cold, and the patients, after having been for some days almost insensible of their miserable sufferings, generally expired at stool, exceedingly emaciated.

In some patients, the dysenteric fever at Bengal, through the whole course of the disease, had regular remissions. In others, it was accompanied with a pain in the region of the liver, a tickling cough, and a vomiting of viscid slime. The delirium was never constant, the senses and judgment remaining at intervals entire.

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The duration of the dysentery is various ; at Bengal it frequently proved fatal in a few days ; at China, if the case was neglected, it seldom exceeded seven or eight ; in most places, it was not often protracted beyond the sixteenth day, unless it assumed a chronic form, and then I have seen the disease terminate fatally after a month, and sometimes six or seven weeks.

S E C T. II.

Observations on particular Remedies.

I. BLEEDING has been esteemed absolutely necessary in the beginning of most fluxes. When there is a plethora, or when the disease is accompanied with a fever of the inflammatory kind, no evacuation is better calculated for the relief of the patient, or better adapted to restrain the hæmorrhage. But in hot climates, fluxes being either of a chronic nature, or accompanied with a putrid fever, the strength of the patient sinks from the beginning. When blood appears
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in the stools, which, however, is not always the case, there are the most evident symptoms of colliquation, and the greatest tendency in the humours to putrefaction. The hæmorrhage seems rather to be owing to a dissolution, than too great a quantity of the circulating fluids; and the inflammation of the intestines appears to be occasioned by the acrid matter contained in them. To lessen the quantity of blood would only serve to impair the patient's strength, and, if it did not immediately prove fatal, would at least precipitate his fate. I do not remember to have met with above a case or two which seemed to require bleeding; and the operation, though performed early in the disease, did not in the least relieve the patient.

II. The most effectual emetics are either emetic tartar combined with ipecacuanha, or a few grains of the former dissolved in a decoction of tamarinds. This last form was preferred when the patient was feverish. In either of these ways, the medicine not only proves one
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of the most powerful emetics, but, by acting as a purge, relieves the troublesome tenesmus. I never above twice tried the celebrated vitr. cerat. antimon. which, in the first case, did not operate at all, tho' given to the quantity of ten grains, and, in the last, operated very severely. The small quantity of wax contained in that preparation can certainly be of little or no service in the cure. Emetic tartar, being the most certain of all antimonials, ought to be preferred.

Purgatives are of no less consequence in this disease; but at the same time that they ought to evacuate powerfully, they should not stimulate too much. For this reason, the neutral purging salts answer best; and the medicines of this class, to which I have usually trusted, are the sal Glauberi and sal catharticus. In general, I have found the last to operate with more ease than the former. As there is a necessity for frequent repetition of these medicines, they ought to be rendered as palatable as possible; and every addition which alters their easy purgative qualities should

be carefully avoided. Manna, which is very commonly given with these salts, both renders them more nauseous, and makes them gripe much during the operation.

The best correctors of bitter saline purges are cremor tartari, lime-juice, or brandy, which renders them more agreeable to every palate. This is undoubtedly a matter of no small importance, where there is an absolute necessity to continue them for a length of time ; besides, in putrid cases, such additions must be conducive to the cure.

The oleum Ricini, when properly prepared, and not grown rancid by keeping, I have found to be one of the best purges in the dysentery. It seems to be possessed of an anodyne quality, frequently easing the painful gripes as soon as taken. It never fails to procure large copious stools, and to relieve the tenesmus.

Rhubarb in large doses, with calomel, for want of other purgatives, has been frequently tried ; but, during its operation, the gripes were generally increased,

and the troublesome tenesmus seldom or never mitigated. In the putrid flux of warm climates, calomel is certainly a very improper addition to any purgative; and repeating it so often as they become necessary in the course of the disease, must certainly add to the septic diathesis, and be productive of bad consequences. This is not a matter of mere speculation, but an observation made from experience. In the Bengal flux, even when the patient has been in a convalescent state, so much has the crasis of the blood been dissolved, that I have seen a few doses of mercury, given for some urgent venereal symptom, not only bring on a troublesome salivation, but likewise a return of the disease.

Although rhubarb purges do not answer in the beginning of fluxes, yet after the disease has continued long, and has, in a manner become chronic, a dose exhibited from time to time, with the intermediate use of strengtheners, often produces the best effects.

In the Bengal flux, when the patients continued long in the convalescent state,
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rhubarb often proved of great service, particularly when five grains of the powder, or a dram of the tincture, was exhibited in a glass of wine before dinner; but, in bad cases, a decoction of bark and cascarilla was prescribed at the same time.

III. Ipecacuanha in small doses has been accounted a specific for the cure of the dysentery. The qualities of causing a diaphoresis, relieving the gripes, and opening the belly, are usually ascribed to it. If in warm climates it was really possessed of them, it would undoubtedly be an inestimable remedy. I have frequently tried it, but must acknowledge, with very little advantage. A few grains of it will keep up a troublesome nausea, but I scarcely ever saw it relieve the gripes, or occasion any easy stool. In the beginning of the disease, prescribing it in this manner is only trifling with the patient.

From the failure of ipecacuanha, so much celebrated as a principal remedy in cold climates, I have been induced to think, that,
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by long keeping, and by the heat of the climate, it is soon totally deprived of its purgative qualities. The authority of Piso, who first recommended it in the dysentery, confirms me in this opinion. He gave it when fresh, and chiefly relied upon its virtues as a cathartic.

But I would not seem to infer from this, that ipecacuanha is an useless medicine in the dysentery; when joined with opium, it is one of the best astringents; and when given with an intention to clear the first passages, its purgative quality can be restored by the addition of a quarter of a grain of emetic tartar to each dose. In this last form I have often given it with good effects; but when the purgatives already mentioned can be procured, they ought to be always preferred.

IV. The most usual astringent medicines prescribed in the dysentery are, diascordium, philonium, and theriac. or powders of the same kind, called species. In the form of electaries and confections, it is indeed surprising that any of these medicines should ever be sent out to

warm

warm climates, as they soon ferment and spoil by keeping. The same objection, however, cannot be applied to the species; but most of them are very inelegant faragoes injudiciously jumbled together. These antidotes, as they are called, have stood the test of ages, and have been implicitly prescribed by one eminent physician after another, and their virtues in a manner rendered sacred; so that to treat them with the contempt they justly merit, might, perhaps, be dangerous. The basis of them all, consisting of an opiate and aromatic, may be easily prepared, when such medicines are judged necessary; and the virtues of any of them are much surpassed by the combination of an opiate with an emetic.

After evacuations, when astringents seemed to be proper, I have often tried the extract of logwood and the semirouba, but have always found them ineffectual medicines. The first, although properly prepared, soon becomes mouldy in warm weather; neither does the last keep well; and, perhaps, it may be in a
great

great measure owing to this, that these medicines so seldom answer; but of the whole of this much boasted tribe, the only medicines which I have seen exhibited with any remarkable advantage were opium and ipecacuanha, the decoction of log-wood, bark, and cascarilla. However, in cases which are neglected at first, the effects of them all are very precarious, and most of them, if given too soon, will exasperate the disease.

IV. The Peruvian bark, from its corroborant, astringent, and antiseptic virtues, seems to be well adapted for the cure of this disease, especially when it depends on the same causes which produce remitting fevers. Although it will generally be found to be possessed of virtues far superior to every other astringent, yet it is not near so great a specific in fluxes as in fevers. In the putrid flux at Bengal, no medicine was attended with more wonderful effects. It was found as necessary a part of the cure as evacuations by vomits and purges. At first, the cascarilla was given with great advantage;
S but

but the symptoms of putrescency running high, it was thought necessary to combine it with the bark, the latter being of a much more antiseptic nature. They were first given in decoction, and afterwards in substance, as soon as the stomach could digest them. Yet, in many cases, the putrefaction was so universal, and the fordes in the bowels so acrid, that, notwithstanding the use of opiates, the medicine was speedily carried off by stool, and the patients, in a manner half corrupted, fell victims to the disease.

Since that period, I have given the bark in the dysentery, in the Streights of Malacca, and at China, in the year 1771, without producing any good effects. It seemed to aggravate all the symptoms, and was never attended with the least advantage till the disease was overcome, and nothing seemed to be wanting to complete the cure, but bracing the relaxed viscera. Even then, in general, opium, combined with ipecacuanha, and the decoction of log-wood or cascarilla, answered better.

But

But it is by no means surprising, that the bark should not be found equally efficacious in all dysenteries, as this disease is of a mixed nature, and depends upon the epidemic constitution at the time. However, it has this advantage above all other astringents, that an experiment of its virtues may be tried without any risk to the patient; whereas a premature use of some of the others may be attended with fatal consequences. The greatest dilemma we are ever under in the exhibition of it is when symptoms of putrefaction in fluxes seem to demand its immediate use, and yet, from the bad state of the stomach and bowels, it cannot be retained in sufficient quantities to be of any service. In some of the Bengal cases, I was induced to believe, that if the bark had been applied by way of fomentation, as recommended by Dr. Alexander * of Edinburgh, it would have proved very beneficial; but the expence and difficulty of procuring it

* Vide Experimental Essays by Dr. Alexander, then surgeon, at Edinburgh.

in sufficient quantities prevented any experiment of that kind.

S E C T. III.

The Cure of the Dysentery.

I. IN the early stage of the dysentery, I have found the following method of cure most effectual. First of all, the emetic powder, N^o. 1, was prescribed, which never failed to operate powerfully, and generally relieved both the stomach and bowels.

Next morning, I gave the prescription, N^o. 3 or 4, and, unless the pain of the bowels and tenesmus abated, the purge was repeated for the four following days, in such doses as to keep up a free discharge by stool. During this course, the opiate, N^o. 6, was taken every night at bed-time. But when the irritation in the rectum was violent, emollient and anodyne glysters gave more relief. For this purpose, I directed from six to eight ounces of a decoction of linseed, or starch, with

with forty or fifty drops of laudanum, to be injected.

If the disease continued longer, or if astringents appeared to be necessary, I gave small doses of ipecacuanha and opium, having recourse to the emetics and purges from time to time, if the gripes, &c. returned.

In the Bengal dysentery, the same method was followed, only when the disease was accompanied with fever, the ptisan, N^o. 4, generally answered better than the emetic powder; and, in most cases, it was found indispensably necessary, both to prevent putrefactions and to reduce the fever, to use the evacuating method alternately with the antiseptic restringents, N^o. 7.

Any other method of cure I have always found very ineffectual; and unless the fever, or symptoms of putrefaction, demand the intermediate use of other remedies, considerable ground is lost by omitting the purgatives for one day. These continued evacuations may, at first sight, appear hard in a disease attended

with such symptoms of putrefaction and so great a prostration of strength; yet certainly every one acquainted with the matter will readily allow, that a continual fruitless straining and painful tenesmus will weaken the patient more in twenty-four hours, than three or four easy stools procured in the same time by a gentle cathartic.

The remedies which will be found to answer indiscriminately in all fluxes are emetics and purgatives. The only objection to this, which I have ever met with, is in the history of an epidemic flux given by Sydenham, and another at Edinburgh, mentioned in the celebrated *Essays* of that society. But it is to be observed, that purges, in the days of that judicious physician, were very stimulating, and those tried in the last cases consisted of rhubarb and calomel. Perhaps, if more lenient purges had been prescribed, they would have been attended with more advantage.

The use of saline purges in this disease was introduced by the judicious physicians of the army, during the late wars in Germany.

many. These gentlemen, stimulated by the liberal spirit of inquiry, made many excellent improvements in the practice of medicine, and their observations will continue to merit the esteem and admiration of the public.

II. The diet ought to be much of the same kind with that recommended in the fever ; and when the disease is accompanied with the putrid diathesis, nothing will be found to answer better than ripe fruits, both for opening the belly, reducing the fever, and preventing putrefaction. In the putrid dysentery at Bengal, when limes could not be procured, I have, with great advantage, added vinegar to the drinks, and never found that this sharp acid augmented the gripes.

But when the disease has continued long, or when the patient is in a convalescent state, both ripe fruits and vegetable acids should be given sparingly, as, by their laxative quality, they are apt to bring on a return of the disorder.

The food should consist of the farinacea, such as rice, sago, &c. to which wine

ought to be added freely to support the sinking strength of the patient.

Through the whole course of the disease, the air ought to be kept cool and pure, particularly on board of ship, where many patients are often crowded together; for, unless the apartments are frequently washed, fumigated, and sprinkled with vinegar, it will be in vain to think of removing the disease or to prevent it from becoming general, by the most powerful remedies given internally.

III. During a sickly season, besides avoiding the habitations of the sick, the best method of prevention will be found to keep the body clean, and the belly open by small doses of rhubarb, and to live upon a diet of easy digestion. On the whole, the prophylaxis does not in the least differ from what has been already recommended in the fever.

In the convalescent state, to prevent a relapse, the patient should abstain from all animal food, except light soups. When he begins to recover, a moderate use of such fresh meats as are of easy digestion
may

may be allowed ; and for his greater security, he should continue the use of the Peruvian bark.

When the strength is in some measure restored, the use of the cold bath, gentle exercise in a carriage, but particularly a change of climate *, are the most effectual means to complete the cure.

I shall now proceed to illustrate the method of treatment, by subjoining a few cases of the diseases mentioned in this chapter.

* Convalescents, after a fit of sickness in Bengal, would often be suddenly restored to health by a short voyage to the coasts of Malabar or Coromandel. Those who continue valetudinary at Madras often recover their usual health by a short residence at China ; or, instead of this, they might go to Bengal during the pleasant and healthy months of December, January, and February. The gentlemen reduced by fluxes at China, may take a voyage to St. Helena, or the more delightful settlements of the Dutch at the Cape. Such shifting of climates would save many lives, and may be put in practice when a return to Europe would be very inconvenient.

S E C T.

S E C T. IV.

Cases of the Bilious Colic.

C A S E I.

Madras, August 12, 1771. Mr. A—, in the afternoon, was seized with shuddering and sickness at stomach. These symptoms were succeeded by intense thirst and violent head-ach. Small doses of emetic tartar were prescribed, which discharged much bile. He passed a restless night, being tormented with violent pains in his bowels and cramps in his legs.

On the morning of the 13th, when I first visited, he was in the greatest agony from stricture and pain about the navel; he was troubled with subsultus tendinum and cramps in his arms and legs. He faltered in his speech, and had totally lost the use of his limbs: his skin was exceedingly hot, his tongue very foul, and he had been costive for three days. After the exhibition of two grains of opium,
an

an emollient glyster, and the application of warm fomentations, the following was prescribed :

R Decoct. tamarind. ℥viii.

Tart. emet. gr. i ss.

Sal. cathart. ℥i. m.

Cap. cochlear. ii. omni behorie donec
laxetur alvus.

The first and second doses vomited him, the remainder purged him frequently, and his stools were large and bilious. In the evening, his skin was cool and his pulse natural ; he could use his limbs, and was free from cramps and convulsions. but complained of the greatest debility and soreness in the calves of his legs. A grain and a half of opium were given at bed-time, after which he passed an easy night, and sweated plentifully.

In the morning of the 14th, his tongue still continued foul, and he complained of pain and stricture about the navel. A full dose of the prescription, N^o. 4, was ordered. At ten, a. m. he was seized with violent cramps in his legs and convulsive twitches of his right arm. As the
laxa-

laxative had operated three times, a grain and a half of opium was given, which procured him immediate relief. The spasms and cramps returning, it was repeated at bed-time.

On the morning of the 15th, the cramps and convulsive twitches recurred with violence, his skin was hot and dry, his pulse small, and only beat 70 pulsations in a minute; his tongue was clean, and his belly open. The following bolus was prescribed every four hours, with two spoonfuls of the julep:

R Mosch.

Sacch. alb. aa gr. xv.

Opium puriss. gr. i.

Conf. card. q. s. f. bol.

R Aq. cinnam. ten.

Sp. Minderer. a ℥iii.

Salin. acernat. ℥ii.

Syr. simp. ℥i. m.

He continued free from pain in the day; but having omitted his medicines, he had a very severe attack of the spasms at night, which were again removed by the musk and opium.

On the morning of the 16th, he was free from every complaint, except weakness in his limbs and pains in his bones. His medicines were repeated every four hours, which sweated him profusely; and at night, he found himself perfectly easy.

On the 17th, as he was costive, a gentle laxative was prescribed. His complaints totally left him, and he recovered in a few days.

C A S E II.

Madras, August 10th, 1771. Mr. N—, aged eighteen, was seized with vomiting of bile, accompanied with gripes and tenesmus. These complaints were removed by an antimonial vomit, a dose of salts, and an opiate.

On the afternoon of the 18th, his skin was hot, his pulse quick, and his tongue furred. He complained of a fixed pain in his bowels, which, at times, was exceedingly violent. He had a continual pressing inclination to stool, having voided nothing for some days. The emetic,
2 N^o.

N^o. 1, was given, which operated several times, but without relieving him. Having an utter aversion to a glyster, the following was prescribed :

℞ Decoct. tamarind. ℥viii.
Sal. cathart. ℥i ss. m.
Cap. cochl. ii. singulis horis.

His stomach did not retain the physic, the constipation continued, and during the night he had a pressing inclination to stool every five minutes.

On the morning of the 19th, he vomited a considerable quantity of bile. The pain in his bowels recurring with violence, a spoonful of the oleum Ricini was prescribed every hour, which purged him several times. Six grains of the opiate, N^o. 6, were given at bed-time. He rested well in the night.

On the morning of the 20th, he complained of tenesmus, half an ounce of the oil was repeated, which procured him three plentiful stools. He took the opiate at bed-time. His complaints left him, and he soon recovered.

The bilious diseases at Bengal and Madras* were treated nearly in the same manner; but if the disorder continued longer than six days, it was necessary to have recourse to the bark, to complete the cure.

Cases of the Dysentery.

C A S E I.

Culpee, September 11th, 1768. Robert Moat, seaman, was seized with the remitting fever, which, in four days, yielded to the common treatment, but he still continued feeble, and had a return of head-ach at night.

On the 21st, he complained of violent gripes, had a frequent desire to go to stool, but voided nothing but mucus tinged with blood. His tongue was foul, his pulse quick, and he was weak, emaciated, and much dejected. The powder, N^o. 1, was given at separate doses, which operated well; and the opiate, N^o. 6, was prescribed at bed-time.

* Vid. Part I. p. 12—40.

On the morning of the 22d, the gripes and fruitless straining recurred. The purging ptisan, N^o. 3, was prescribed, which procured him three copious stools. The opiate was repeated at bed-time. In the night, he purged very frequently, his stools were black and exceedingly putrid.

On the morning of the 23d, the purging ptisan was repeated. After its operation, finding him greatly relieved, the opiate was ordered at bed-time.

On the morning of the 24th, he was free from gripes and tenesmus, but the purging still remained, two ounces of the bark decoction were given with a few drops of laudanum, and repeated every two hours, by the use of which, in a few days, he got well, and returned to duty.

On the 22d of October, he relapsed into the fever, which again terminated in the dysentery. After evacuations, the bark decoction, N^o. 7, was prescribed, and he gradually recovered.

C A S E

C A S E II.

At Culpee, September 7th. Richard Jones, for some days, had been troubled with a diarrhæa, which increasing at last brought on violent gripes and tenesmus. He now complained of continual sickness at stomach, and voided nothing but mucus tinged with blood; his tongue was foul, his skin hot, and his pulse frequent. Four grains of the powder, N^o. 1, were given every three hours, which vomited him, and procured several easy stools. In the evening, the opiate, N^o. 6, was prescribed.

8th. He purged frequently in the morning; the gripes and tenesmus were severe; he was very weak, and had no appetite. Small doses of ipecacuanha were given every four hours. His complaints continuing, at bed-time an emollient glyster was injected. On the 9th. His pulse was quick, and he complained much of gripes and tenesmus. As the ipecacuanha seemed only to keep up a disagreeable nausea, six drams of the oleum Ri-

T

cini

cini were prescribed, which procured two easy stools. The opiate was repeated at bed-time, and he rested well in the night.

In the morning of the 10th, the gripes and tenesmus returning, the oleum Ricini was prescribed. His complaints abated, and he had three easy stools. The opiate was repeated in the evening. Having eat an improper supper, he was seized with colic pains, and vomited and purged frequently towards the morning. These complaints continuing on the 11th, half an ounce of the oleum Ricini was repeated. At night, he was easier, and took the opiate.

On the morning of the 12th, the gripes were moderate. Two ounces of the decoction, N^o. 7, with eight drops of laudanum, were prescribed every three hours, and he was allowed a pint of port in his rice-gruel. He had only one stool in the day.

I visited him again on the 20th. Having omitted his medicine for three days, his stools were small, exceedingly offensive,
five,

five, and ran off immediately after the gripes. His strength was much reduced, his pulse was frequent, and his skin clammy; he had a continual nausea and slight hiccup. Half the powder, N^o. 1, was given, which discharged much bile. Although the opiate was repeated at bed-time, he purged frequently in the night.

On the 21st. The bark decoction was prescribed every two hours, with a few drops of laudanum, and wine was allowed freely. In a few days, the flux left him, and he gradually recovered.

C A S E III.

Wampoa, December 1st, 1771. Robert Dawcet, formerly subject to fluxes while in India, for some days past was troubled with a purging, violent gripes, and tenesmus; his tongue was foul, and his pulse natural. The emetic powder, N^o. 1, was given at separate doses, which operated well. At bed-time, he had a dose of the opiate, N^o. 6.

The 2^d. In the morning, the purging gripes and tenesmus returned with great

violence. The ptisan, N^o. 2, was prescribed, which immediately relieved him, and gave him three stools. At night, the opiate was repeated.

On the 6th, when I visited him again, although he had taken small doses of ipecacuanha thrice a day, all his complaints were increased. He said he had purged fifteen times in the night. His pulse was 90, his skin hot, the gripes were very severe, and his stools were small, bloody, and corrupted; he was much exhausted, had a slight hiccup, and complained of nausea, and sickness at stomach. Half the powder, N^o. 1, was prescribed, which vomited him twice, and procured him some large stools. He was allowed red port in his gruel, and the opiate was repeated at bed-times.

On the 7th. He was free from gripes, his tongue was pretty clean, and his pulse beat 80. Four grains of ipecacuanha, with a quarter of a grain of opium, were ordered to be taken every four hours.

On the 8th. The purging and tenesmus returned, his stools were yellow and small,
but

but without blood ; his tongue was still foul, and his pulse rather accelerated. The purging ptisan was repeated, and the opiate at bed-time.

On the morning of the 9th, he was pretty free from gripes, but a slight purging still remained. The boluses of ipecacuanha and opium were repeated, with three ounces of the decoction of log-wood.

On the 10th. He had two stools, and his appetite began to return.

The 11th. He continued to recover, and his stools became feculent. The bark was ordered to be taken every four hours in red port.

On the 20th. He was quite well, and returned to his duty.

C A S E IV.

At Wampoa, John Thomas, on the 4th of December, 1771, was seized with a simple purging, which, in a day or two, terminated in severe gripes and tenesmus.

6th. When I visited him in the morning, he complained of pain in his bowels, and had a constant fruitless inclination to

T 3

stool,

stool, voiding nothing but slime; his tongue was foul, and his pulse natural. The powder, N^o. 1, was prescribed, which operated twice; but his complaints remained as violent as ever. The purging ptisan, N^o. 3, was ordered, which procured him three plentiful stools. At night he was very easy; he took an opiate, and rested well.

7th. On the morning, the gripes and tenesmus returned, and he had a continual fruitless inclination to stool. One of the pills, N^o. 5, was repeated every four hours, which did not occasion the least nausea, but in the afternoon procured him several stools. The opiate was taken at bed-time, and he passed an easy night.

8th. The purging recurred in the morning, the gripes were easy, and the tenesmus was not very urgent. The pills were continued, and he had two excrementitious stools. The opiate was repeated at bed-time.

On the 9th. Little alteration could be observed. His medicines were continued.

On

On the 10th. He was perfectly free from gripes and tenesmus. Small doses of ipecacuanha and opium were prescribed every four hours. His complaints totally left him, and in a few days he returned to duty.

S E C T. V.

Of the good Effects of large Doses of Bark and Opium in the Dysentery.

IN the year 1771, after a tedious voyage * to the coast of Malabar, a putrid dysentery made its appearance on board the True Briton Indiaman. The following observations on the cure were communicated to me by Mr. Robert Foreman, surgeon of that ship.

“ After thoroughly cleansing the primæ viæ, I found it the best way to have immediate recourse to the bark, in as large doses as the stomach would bear, with a grain of opium every four hours. This

* The True Briton sailed from St. Helen's, the 20th of April, and arrived at Cocheen the 13th of December, 1770.

method of treatment was owing to the following incident.

“ January 14th, 1771. At Onoar, I was seized with a colera morbus, which terminated in the dysentery. A variety of medicines were tried, but in vain. The disease daily increased, my strength was much reduced, and my stools became exceedingly putrid.

“ On the 29th. I arrived at Bombay, and by the advice of the surgeons there, took pills of ipecacuanha and camphor, a medicine in great repute in most parts of India. During the use of these, becoming daily worse, I was determined once more to prescribe for myself, and therefore took every four hours, two ounces of a strong decoction of bark, with a grain of opium. My drink was port-wine negus, and I eat a pound of grapes in the day. In three or four days, I was so much better that my stomach could bear a dram of the bark in substance every four hours; but it was still necessary to take the opiate, to prevent it from running off by stool. As my strength returned, I gradually.

dually left off the use of the opium, but continued the bark till I was able to use the cold bath.

“ Upon my recovery, I was desired to visit Mr. —, who came out in the *True Briton*, and was seized with the disorder in the middle of January; I found him much exhausted. From the time he landed at Bombay, he had taken nothing but the pills of ipecacuanha and camphor. A dose of salts was prescribed, and the bark and opium in the same way I had used them, by which means the disease was removed in a few days.

“ Our joiner, after having been several weeks in the hospital, where he was growing daily worse, left it, and recovered in little more than a week by the use of the bark and opium.

“ Above thirty dysenteric patients were treated in the same manner, and I was so fortunate as to lose only one, who, after having had the disorder a long time, relapsed in the convalescent state, and died in a few weeks. But it is necessary to remark, that this man had such an
aver-

aversion to the bark, that, although he had been cured by it once, I could never prevail upon him to take it again in any form whatever. Three others, indeed, died of this disease; but, as I did not attend them, bark and opium were not prescribed.

“ Till lately, I imagined this was a new method of treating the dysentery; but, in looking over Dr. Morton’s works, I find bark and opium were given in as large doses by that judicious physician†.

S E C T. VI.

Prescriptions in the Dysentery.

N^o. 1. R Pulv. ipecacuan. gr. x.

Tartar. emet. gr. ii.

Dof. a gr. vi. ad xii.

N^o. 2. R Decoct. tamarind. ℥viii.

Tartar. emet. a gr. ii. ad gr.
iv. m.

Dof. ℥ii. singulis horis.

N^o. 3. R Sal. cathart. a ℥vi. ad ℥i ss.

Solve in aq. font. ℥vi.

† Morton. Secundæ Exercitationis Appendix, p. 162.

Et adde crem. tart. vel. succ.
limon. q. f. vel
Sp. vin. Gallic. 3vi.
Cap. duobus vicibus.

N^o. 4. ℞ Ol. Ricini ab 3 fs. ad 3x.
Aq. Menth. pip. vel. succ.
limon. 3 fs. m.

N^o. 5. ℞ Pulv. ipecacuan. a gr. viii. ad
xii.

Tart. emet. a gr. i. ad gr. ii.
Syrup. balsam. q. f. forment.
in pil. iv.

Capiat i. tertia vel quarta quaque
hora.

N^o. 6. ℞ Opii pur. 3i.
Sapon. alb. 3iii.
Syr. com. q. f. m. f. mass. pilul.
Cap. h. f. a gr. iv. ad gr. vi. cum
pulv. ipec. gr. ii. vel iii.

N^o. 7. ℞ Cort. Peruv. trit. 3i.
Cascarill. 3 fs.
Coque ex aq. font. 1b i. ad 3ix. &
adde sub. finem,
Cort. cinnam. 3i.

Gum.

260 *Prescriptions in the Dysentery.*

Gum Arabic. ℥iii.

Colatur. adde

Tinct. cort. Peruv. vel

Vin. rub. ℥ii. m.

Dos. ℥ii. secunda quaque hora
add. pro re nata aliquot gutt.
laud. liquid.

N^o. 8. R Pulv. cort. subtiliff. ℥vi.

Cascarill. ℥iii.

Syr. com. q. s. f. elect.

Dos. ℥i. in vin. rub. tertia quaque
hora.

N^o. 9. R Amyl. pulv. ℥vi.

Aq. font. ℔iii.

Coque ad ℔ii. & adde sub finem
coct.

Cort. cinnamom. ℥i.

Gum. Arabic. ℥ ss.

Cola & adde pro re nata

Elix. vitriol. q. s. ad gratam
aciditatem.

Capiat pro potu ordinario.

N^o. 10. Decoct. Campechens. Pharm.
Edinens.

C H A P.

C H A P. IV.

*Observations on the Cases of the Fever and
Dysentery.*

TO point out a method of cure, and to narrate cases so far only as they serve to illustrate or confirm any doctrine delivered, can tend very little to improve the science of medicine.

The most rational plan to ascertain the effects of any particular treatment, is to relate, with candour and fidelity, its bad as well as its good success. By this means, the practice of medicine would be reduced to so many certain facts ; the advantages and disadvantages of different methods of cure would be obvious ; and useful observations would take place of idle speculations.

In the collection of cases on the remitting fever, I have inserted all those which terminated fatally.

When the second case occurred, altho' I had given the Peruvian bark to several

patients, when no remissions of fever could be procured, yet, at that time, I had not sufficiently experienced its safety in continual fevers unaccompanied with symptoms of putrefaction. Every other method was tried, and the case proved unsuccessful. In the two other cases, N^o. III. and XII. the patients had such an aversion to the medicine, that they could not be brought to use it. From all these cases it appears how little dependence can be put upon any other method of cure.

The case, N^o. VI. points out the dangerous consequences of neglecting proper evacuations in the beginning of fevers, in unhealthy situations, and, at the same time, shews how necessary they are to prepare the patient for the cure by Peruvian bark.

Before the case, N^o. XVII. occurred, from the great success I had in fevers, I was almost led to believe, that the bark, when timely exhibited, was a certain remedy in the cure of fevers in hot climates. Although one unsuccessful case can never detract from the more general virtues of
any

any medicine, yet it serves to prove, that we are not possessed of a never-failing specific in any distemper.

From all the other cases in the collection, the virtues of the bark, whether exhibited in the remissions or exacerbations of fever, are very evident.

As it has been my endeavour merely to represent facts, I shall draw no farther conclusions from the cases; but must add that I have given the bark to one hundred and fifty patients in fevers, at Bengal and other places in the East Indies, besides to several others whose cases were not registered, and out of that number, lost only one who took the medicine.

Amongst a number of patients afflicted with the Bengal dysentery, I lost four. Two of them were much reduced by preceding fevers before I visited them; another, as he had the greatest aversion to every purgative, was prescribed small doses of ipecacuanha. The bark and every other medicine was tried, but all to no purpose, and he died on the forty-second day of the disease.

Since

Since that period, I have had about fifty-eight patients in the dysentery, whose cases were daily registered. All of them recovered by the method of treatment already laid down in the chapter on the Dysentery ; but it is proper to observe, that I had the management of the patients from the beginning, and of course had time to make the necessary evacuations before the strength was reduced.

I have added an account of the number which died in all the ships at Culpee, during the sickly season, 1768, with a view to compare the success of different management.

Most of the surgeons who practised at Bengal bled in the beginning of all fevers, and never gave the bark but in distinct remissions ; and, indeed, the small quantity of it carried out in the medicine chests put it out of the power of any of them to prescribe it freely.

One of the ships sailed from England in January, 1768, and arrived at Culpee the 24th of June. Although she left Bengal in the beginning of September, during
the

the rage of sickness, out of the ship's company, which consisted of one hundred and nine men, eight died at Bengal, and three during the voyage.

Another ship, with one hundred and thirteen men, although the sickness was not general on board, lost seven in August and September, and during the voyage seven more died.

Another ship, with one hundred and eight men, lost ten during the sickly season at Bengal, and four in the voyage.

The Salisbury, one hundred and three men, enjoyed almost a total immunity from sickness. Two of her men died at Culpee, and two during the voyage.

Another ship, with one hundred and seventeen men, lost thirteen at Bengal, and four during the voyage.

The Ankerwyche lay at Calcutta, and only one man died. Next year she was anchored at Culpee; the ship's company consisted of one hundred and one men; although she sailed from Bengal the 17th of October, thirteen died, and eight during the voyage.

Of all the ships which were in Bengal, the Dutton and Talbot agreed in most circumstances. They remained at Culpee all the sickly season, and were equally visited by diseases; they were much about the same time out at sea, and were off the Cape of Good Hope in the same stormy weather. The crew of the Dutton consisted of one hundred and seventeen men; sixteen died at Culpee, and twenty-four during the voyage. The Talbot had on board one hundred and eight men; eight died at Culpee, and three in the voyage.

In justice to the method of cure, I must observe, that, out of the number who died on board the Talbot, one was carried off by a suppuration of the liver at the hospital, and other two by a flux. As I did not attend them, I do not know how they were treated. The three who died at sea were carried off by abscess in the liver, the consequence of neglected fevers.

Out of eight hundred and seventy-six, the compliment of men carried from England on board eight ships, seventy-eight died at Bengal, and fifty-five at sea;
a mor-

a mortality which, I apprehend, never would have happened, had the bark been freely prescribed, and a proper regimen allowed the sick.

C H A P. V.

Observations on the Hepatitis, or Disease of the Liver.

IN hot climates, of all the viscera in the human body, the liver is most subject to disease. It suffers from obstruction, inflammation, and suppuration.

The disease of the liver is very common over all India, but particularly on the coast of Coromandel. As the disease sometimes attacks in perfect health, and sometimes is the consequence of preceding sickness, it may, with great propriety, be divided into original and symptomatic.

When the disease is original, it is generally accompanied with an uneasy sensation of weight under the right hypochondrium, and, for the most part, with a very sharp pain about the clavicle or shoulder of the same side. As the disorder

der increases, the countenance becomes yellow, the patient complains of sickness or oppression at stomach, difficult respiration, and uneasiness when he lies on the opposite side.

Although these are the common characteristic symptoms of the disease, yet, so insensible is the liver, that suppurations have been found, on dissection, when there have been no reasons to suspect inflammation or any other disease of this organ. Therefore, it frequently happens, that the disease is fixed, and often incurable, before any alarming symptoms have appeared. The yellow colour which accompanies the disease, is also precarious, as no cause which does not obstruct the passage of the bile into the duodenum, occasions a jaundice; however, in all the cases which have fallen under my care, the countenance became remarkably fallow, and had a tinge nearly resembling a lead colour.

The disease of the liver has the greatest tendency to impostumation. When the abscess points outwards, and the matter
is

is discharged by incision, the patient has some chance of recovery ; but when it bursts into the cavity of the abdomen, or into that of the thorax, by an adhesion of the liver to the diaphragm, the case will almost certainly prove fatal.

In cold climates, the cure, as in all other inflammations, depends upon plentiful bleeding, antiphlogistic purges, and the application of a blister to the part affected.

But in the East Indies, this method being found unsuccessful, and the disorder in general proving soon fatal, the most experienced practitioners in that part of the world prescribe mercury as a specific. They apply it externally upon the part, and give it internally in such doses as to excite a gentle salivation. When it produces this effect before the matter is formed, it will generally be found the most certain and expeditious cure. But there is no doubt that the success of mercury is greatly exaggerated. It is so fashionable a remedy, that it is prescribed in slight affections of the liver, which, in all probability, might have yielded to

once or twice bleeding, the repetition of gentle physic, and the application of a blister.

I have only had an opportunity of seeing the disease, when original, in six patients. One case was remarkable for a tickling cough, difficult respiration, and irregular exacerbations of fever. On the sixth day, his countenance grew very yellow; he had frequent sickness at stomach, with a reaching to vomit, and pain about the right clavicle, particularly when the seat of the liver was pressed. He was blooded, had a blister applied, and took several doses of soluble tartar *. On the eighth day, his fever abated, the painful symptoms left him, but his countenance remained fallow, and he was exceedingly emaciated. An infusion of camomile, with salt of tartar was prescribed every three hours †. He continued open in the belly,

* No. 1. R Mannæ ℥i.
Tart. solub. ℥ ss.
Aq. fontan. ℥ vi.
Capiat duob. vicibus.

† No. 2. R Flor. Chamæm. ℥ ss.
Sal. tart. ℥ ii. Aq.

belly, made his urine copiously, and soon recovered.

The other cases which occurred resisting the common treatment, and the patient's being able to bear mercury, on the fourth or fifth day of the disease, two grains of calomel, made into a bolus with conserve of roses, were prescribed twice a day, sometimes with an opiate in the night-dose, to prevent its running off by stool†. As soon as the mouth became affected the medicine was omitted, and although a salivation was by this means avoided, yet, in all of them, the cure was completed in a fortnight or three weeks. During this course, if the respiration became difficult, or the pain in the side more violent, it was necessary to take a few ounces of blood, or to apply a blister.

Aq. fontan. bull. ℥viii.
Infunde per quatuor horas et cola.
Capiat ℥ii. tertia quaque hora.

† No. 3. R Calomel. gr. ii.
Pil. saponac. gr. x. . m.
Form. in pil. No. ii.
Capiat h. s.

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When the disease of the liver is the consequence of obstinate fevers and fluxes, it is attended with the putrid, and not with the inflammatory diathesis; mercury would be improper, and every other method of cure will be found very ineffectual, as will appear from the following cases.

I. On the 8th of October, 1768, I was desired to visit Mr. C—, at Calcutta, who had been seized with the putrid remitting fever in the beginning of September. When I saw him, he was exceedingly emaciated, his pulse was frequent, his breath offensive, his countenance fallow, and he was now and then subject to hæmorrhage from the nose. But what gave him most uneasiness for several days past was a weight in the seat of the liver, and a sharp pain about the right clavicle. In these circumstances, a German surgeon had prescribed mercurials and a decoction of sarsaparilla. Judging these improper, they were laid aside, a blister was applied to the part, and a gentle laxative, with soluble tartar, was prescribed.

On

On the 10th, the pain of the clavicle was removed, the blister discharged well, but the exacerbations of fever returned at night, with an increase of the pain under the right hypochondrium. As he had taken no bark during the course of his fever, and as the hæmorrhage from the nose increased, it was prescribed in strong decoction with the saline draughts.

From this to the 18th, the symptoms were rather flattering, the hectic fever was diminished, and he was able to sit up. The uneasy sensation continued in his side, although no prominence could be observed; but his weak habit of body still deterred Mr. Hamilton*, who was then called in, and me from giving him mercury.

On the 19th, he was seized with a tickling cough, had very difficult respiration, and could not bear the region of liver to be pressed. At night, after an attack of rigors, he vomited up a considerable quantity of white foetid matter; the cough and expectoration continued, his countenance became exceedingly ghastly,

* Surgeon at Calcutta.

ly, he gradually sunk, and in three or four days died.

The body was not suffered to be opened; but there is no reason to doubt that the suppuration of the liver terminated as in the following case.

II. Joseph Patington, a man of a strong robust constitution, in the beginning of October, 1768, was seized with the dysentery at Culpee. Having an aversion to medicines, and trusting to his former good health, he not only neglected every proper precaution, but lived very irregularly.

In the end of November following, the dysentery left him, and he was seized with an intermitting fever. Having also neglected this disease, it changed its type, became continual, and was accompanied with symptoms of putrefaction. Bark was now taken, but the fever was not totally removed by it.

On the 10th of February, 1769, when I visited him, he complained of a very acute pain in the top of the right shoulder. The seat of the liver was examined,

but no external fullness could be perceived, but he was sensible of a dull heavy sensation in the part. He was much exhausted; his countenance was yellow, his pulse was always frequent, and his fever increased at night. A blister was applied to his side, and the pain in his shoulder disappeared.

On the 11th, the pain of the clavicle returned, and the feverish paroxysms increased at night. A decoction of bark, with a little tartarus solubilis, was prescribed. The symptoms remaining the same, and the weak state of his body forbidding any strong deobstruent, saponaceous medicines were prescribed †.

For the following ten days, he seemed to be greatly relieved; the pain in the shoulder left him, and the dull sensation under the right hypochondrium gave

† No. 4. R Sapon. Venet. ℥ii.
Pulv. Rhub. gr. x.
Syr. simpl. q. s.
F. mass. in pil. xii. dividenda.
Capiat iv. ter die, superbib. cyath. infus.
No. 2.

him little uneasiness. The pills were continued, only the quantity of rhubarb was diminished, as they purged him.

In the beginning of March, his countenance was very yellow. The pain in the seat of the liver became very severe, and was accompanied with oppression at stomach, and difficult respiration. These symptoms encreasing, on the 21st, he expectorated near a pint of sanious matter.

On the 28th, a purging was added, and he complained much of sourness in his stomach. Large doses of the testacea were given, but to no purpose, and he died on the 3d of April.

Upon dissection, the liver appeared found on its surface; but the right lobe extended higher up than usual, and adhered strongly to the diaphragm. At this part, an abscess was found, which contained a considerable quantity of purulent matter. Its shape nearly resembled that of the human heart, and the matter made its way through the diaphragm at the adhesion, which easily admitted the finger. The gall-bladder was full of bile; the
I
spleen

spleen was a little enlarged, and the stomach was small and empty.

Upon inspecting the cavity of the thorax, the light lung was wasted and adhered to the diaphragm, and the purulent cavity from the liver ran up several inches into the substance of that lung. No other remarkable morbid appearance was observed.

III. On the 20th of June, 1771, I was desired to visit a German belonging to a country ship, lying at the island of Johanna. The vessel had been trading at Delagoa three months before, when a fever of a bad kind raged there, and proved fatal to numbers. All the Europeans that now remained were the captain, and chief mate just recovering from weakness occasioned by his fever, and the second officer, who had suffered much by the same disease, in the following miserable plight.

He was confined to his bed; all the abdomen was much swelled, particularly under the right hypochondrium, but he said that part was much subsided during the last fortnight.

A surgeon belonging to one of our East Indiamen, about three weeks before I saw him, had prescribed for him; he had taken small doses of calomel, and had a mercurial plaster applied to his side. When the plaster was removed, the integuments over the sixth, seventh, and eighth ribs, were swelled, œdematous, and painful to the touch. When he was turned to the opposite side, he complained of suffocation, and a quashing of matter in the thorax could be distinctly heard. He constantly laboured under difficult respiration, and continually coughed, and expectorated a frothy purulent matter to the quantity of two quarts in the twenty-four hours.

In this way he had passed the last fortnight; from a strong healthy man, he was reduced to a mere skeleton, and all his hopes were an ardent wish for death to put a period to his complicated distress.

It was proposed, in order to give him some relief, to make a puncture betwixt the ribs; but, as we were to sail next day, he would not consent to so precarious an operation.

I was informed by a medical gentleman who visited this patient a few days after I left him, that a mortification had begun betwixt the sixth and seventh ribs, and that his whole side was emphysematous, with several livid spots. At that time, he still continued expectorating purulent matter in great abundance, and had every symptom of approaching death.

Another patient, who suffered much from the fever and flux during the sickly season in 1768, relapsed into the disease of the liver, to which he had been formerly subject. Mercury was prescribed; however, the disease terminated in suppuration, and he died in a month after he began that course.

In a case which occurred at Bengal, where I attended along with Mr. Steel, surgeon of the Salisbury, the abscess was remarkable for being situated near the spine. The tumor pointing outwards, about a pint of thin foetid matter, was discharged by incision. For two months after the operation, the patient recovered daily, and was able to follow his usual
em-

employment ; but soon after this, the ulcer put on an unkindly appearance, the discharge became more profuse, and symptoms of fresh suppurations took place. The bark, joined with pectorals, was prescribed. This and every other method proving ineffectual, he died tabid in six months.

From the foregoing cases, it evidently appears, that putrid fevers, when allowed to run out for any length of time, frequently terminate in abscess of the liver ; and hence we may see the necessity of exhibiting the bark early, in order to prevent this dangerous consequence.

C H A P. VI.

Observations on the Scurvy.

THE scurvy being a disease so destructive to seamen in long voyages, many eminent physicians have exercised their invention to discover the most effectual means to retard its progress, or lessen its fatality.

Amongst the proposals hitherto offered, those of the judicious Dr. Lind and the author of the *Tutamen Nauticum* have been found to answer best upon experiment. The antiscorbutics recommended by the last author* are cheap and elegant,

* This ingenious author, among many useful antiscorbutics, recommends the inspissated juice of turnips: water-dock, bullace, sloes, wild plums, hips, elder-berries, or crabs, either preserved in coarse sugar, or made into a rob by boiling their expressed juices. Apples, pears, and fruits may be preserved in the same manner, or may be dried in slices without losing their flavour. Good wine is made by fermenting the above extracts with water and sugar. Vide *Tutamen Nauticum*.

and yielded spontaneously by all the woods and hedges in Great Britain.

But of late no proposal has inspired greater hopes of success than the malt infusion recommended by the ingenious Dr. Macbride. His theory, concerning the operation of vegetables, and the manner in which they cure the scurvy, is founded on the most plausible principles, and is supported by seemingly conclusive experiments made out of the body.

If the malt infusion was found to answer in practice, the discovery would be highly important. It therefore merited the most fair and candid trial; and its effects ought to be related with the greatest fidelity, in a matter which so nearly concerns the public welfare.

This consideration has induced me to subjoin the following cases, in which the wort was tried at sea, without having any effect, either to remove the disease or to check its progress.

The malt made use of in the following cases was perfectly sound; it was fresh-ground every day, and the infusion made
in

in the proportion Dr. Macbride directs. But it is to be observed, that malt, after it has been kept a few weeks at sea, loses, in some degree, its saccharine taste; however, it readily fermented, and when sugar was added nearly resembled fresh wort made in England. The malt used in these cases, as it was very carefully packed, must have suffered as little from keeping as that on board the * *Jason*, in a voyage to the Falkland Islands, and which given with so much success in her was return to England.

C A S E I.

Joshua Christian, a young man of an active disposition, on the 23d of June, 1769, was confined below by the scurvy.

* The *Jason* sailed from England the 25th of October, 1765. She left Port Egmont the 18th of January, and arrived in the Downs the 20th of March, 1767. There was no opportunity of trying the effects of the wort till February, 1767. Vide Postscript to Dr. Macbride's Essays, 2d edit.

For some time before, he said, he had been troubled with listlessness and weakness of his knees; and that he became breathless and faint when he attempted to go aloft. His gums were swelled, spongy, and bled on the least touch; his legs and arms were covered with small livid spots, not rising above the surface of the skin; and his belly was costive. He was discharged the use of salted provisions, and was allowed tea and sugar for breakfast, and boiled rice, with wine, for dinner.

25th. A purging ptisan was prescribed, and he was ordered to wash his mouth frequently with an aluminous gargle.

26th. The symptoms continuing, a pint of fresh wort, made into panado with sugar and powdered biscuit, was given twice a day.

On the 27th. No alteration could be observed; his belly was regular, and therefore the wort was increased to two quarts.

On the 28th. His gums were more firm; he complained of tightness in his breast, and found his knees weaker, when he attempted to walk.

July 3d. His countenance began to look fallow, his teeth were loose, and the scorbutic spots of a worse colour. As the wort did not purge him, it was increased to three quarts.

7th. The weather being wet*, cold, and stormy, notwithstanding he continued the use of the wort regularly, his disease began to make rapid progress. His gums were livid, his breath was very offensive, and he was faint upon the least motion; the scorbutic spots were much broader, and of a worse hue; his hams were discoloured; and he complained of flying pains in his arms and legs. The gargle was repeated with tincture of myrrh; fomentations were used; and he took two quarts of the wort in the day.

13th. The tendons of the hams were hard and stiff, his legs were discoloured with purple vibices, and his arms, breasts, and cheeks covered with small livid spots. He had now and then a slight hæmorrhage from the nose; he was greatly dejected;

* For an account of the weather, vide p. 20, & seq.

and when he moved out of his hammock, he was ready to faint,

Being now fully convinced of the inefficacy of the wort, two spoonfuls of lime-juice were given thrice a day ; he was also allowed a pint of red port in his boiled rice, and had tea and sugar for breakfast.

20th. Little or no alteration could be observed. As the lime-juice was now finished, half a pint of mango-shrub, mixed with water, and sweetened with sugar, was ordered to be taken daily.

On the 1st of August, when we arrived at Madagascar, he was very weak and exhausted, and it was the 23d before he was capable of doing the least duty, although he was plentifully supplied with oranges and nourishing vegetable soups.

C A S E II.

John Trott, on the 23d of June, 1769, complained of pains in his knees, great weakness, and troublesome tightness on his breast when he used any strong exercise. His countenance was bloated, and his

his legs were covered with small red spots; his gums were livid, but did not bleed much.

On the 24th. Being costive, a gentle purge was prescribed; and at night, as he complained of flying pains all over his body, he was sweated with camphor and nitre.

On the 25th. He began the wort with the other patient, and increased it to three quarts in the day.

July 3d. He was able to return to duty; the tightness on his breast gave him little trouble; but the purple spots remained as before. The wort was persisted in regularly; and I was highly pleased, imputing this change to its effects.

On the 7th. He was obliged to confine himself below; his legs were more thickly covered with purple spots; his hams were stiff and very painful, and his legs began to swell towards night; he complained much of difficult breathing, and was tormented with flying pains in his arms, shoulders, and back. At night, he was

ordered a bolus, with camphor and guaiac, and after it a pint of warm wort, sweetened with sugar.

The 8th. Being costive, he had a purge, and two quarts of wort were continued daily.

On the 12th. His gums were spongy, and bled on the least touch, and several vibices, resembling contusions, were observed upon his legs. In the afternoon, he had a slight hæmorrhage from the nose.

13th. He was now very feeble and faint, and being tired of the wort, it was discontinued. He was ordered to live upon tea, sugar, and boiled rice, with wine, and a spoonful of lime-juice was given thrice a day. However, he became daily worse till we arrived at Madagascar, where, in eight days, he recovered from all scorbutic symptoms, except weakness.

C A S E III.

Adam Wallis, seaman, on the 4th of July, complained to me of a sore in the right tibia. When I examined it, I found it to be a foul scorbutic ulcer; it was
livid,

livid, painful, and bled on the least touch. He had no other scorbutic symptom, except the usual inactivity and fallow complexion, which generally accompany the disease. When I enquired into his former state of health, he said, that he had been frequently scorbutic, and that, some years ago, he had received a gun-shot wound in the tibia, where the ulcer appeared at present; and that it had frequently broke out at sea, when he made long voyages.

He was ordered to foment his leg with warm water and vinegar; the ulcer was dressed with equal parts of mel *Ægyptiac.* and basilicon, and the wort was prescribed as in the foregoing cases.

For the following eight days, he used the wort regularly, and was very fond of it; however, it produced no other effect than to keep him regular in the belly.

On the 12th. The whole limb was monstrously swelled, very painful, and livid in several places. The ulcer was very putrid, bled more, and the fungus could not be kept down by compression.

fion. About two inches below the first, another ulcer began to appear, the edges were callous, and it bled considerably. His gums were now spongy, he was feeble, and scarcely able to walk. His leg was bathed with warm vinegar, and anointed with a camphorated liniment; the ulcers were dressed with lint, dipped in a strong tincture of bark, acidulated with spirit of vitriol; and the following was given three times a day:

R Succ. limon. ℥i.

Pulv. cort. ℥i.

Syr. simp. ℥i. m.

By this course, which was continued till the 20th, the progress of the disease seemed to be checked.

On the 21st. The lime-juice being finished, he was ordered to have recourse to the wort again. He wasted in his flesh, the ulcers became more putrid, bled much when dressed, and the tendons of his hams were stiff and discoloured.

On the 27th. The wort was discontinued, and he was ordered three drams of bark in the day. His diet was tea and
8 sugar,

sugar, and he was allowed wine; however, the disease encreased till we arrived at Madagascar.

C A S E IV.

John Marshal, seaman, in the beginning of June, 1768, began to be afflicted with the scurvy; however, he continued to do his duty, and concealed his complaints as long as he was able to stand the deck.

On the 6th of July. His gums were rotten, bled considerably, and prevented him from eating any thing solid. He complained of great feebleness when he attempted to walk, and was tormented with very severe pains in the joints of his knees, arms, and in his back. Upon examining his body, I found both his legs covered with black livid spots, and the right ham was considerably swelled, hard, and covered with yellow blotches. He had been costive, and at times bled slightly from the nose. Proper external applications were ordered, and a gentle sudorific was prescribed at bed-time. His diet

diet was tea and sugar, and boiled rice, with wine.

On the 7th, he had a purge, which operated easily; and, on the 8th, he began the wort, as in the preceding cases.

On the 18th. All the scorbutic symptoms were much aggravated; his right leg was monstrously swelled, painful, and discoloured; the hæmorrhage from the nose was more profuse; and he was much dejected. The scorbutic spots were of a worse colour; and the muscles of his arms were indurated in several places.

The fomentations were continued, which always gave him some temporary ease. He was ordered an ounce of the tincture of bark, with as much lime-juice, sweetened with sugar, three times a day; and, instead of wort-panado, his diet was rice-gruel, boiled rice, sugar, and wine.

The 26th. Although the scorbutic symptoms remained, yet he seemed to have lost little ground. The lime-juice being finished, the same quantity of mango-shrub was allowed as in the first case.

He became daily worse, and on the 29th, was so weak and faint, that his

life was despaired of; but getting a view of Madagascar, the hopes of being soon ashore raised his sinking spirits.

On the 1st of August. He was supplied with oranges and vegetable soups.

On the 6th. He was sent on shore; but, for several weeks, he continued weak, and was subject to slight hæmorrhages from the nose.

On the 3d of September, every scorbutic symptom was perfectly removed; he was plump, fat, and healthy, only the tendons of his hams remained contracted. This complaint was also removed in a fortnight, by the steams of warm water, emollient liniments, and mercurial physic.

The malt infusion was given to two others ill of the scurvy. The symptoms increased daily, and therefore it was not so long continued as in the above cases.

All the others sick of the scurvy were ordered to take the usual medicines which are given at sea, calculated, indeed, only to amuse, or at most to palliate some particular

ticular symptoms; the principal of which were, gentle purges when costive, bitters with elix. vitriol. fomentations, and antiseptic gargles.

As there was no live stock on board, the sick had no assistance from fresh meat. Their diet was tea, sugar, boiled rice, and wine.

Although the wine and sugar undoubtedly preserved the lives of many of the sick, by supporting their strength, yet at length, they seemed to have no effect to check the violence of the distemper; and many would have inevitably died, had the voyage been protracted a few days longer.

The wort had also a fair trial on board the True Briton Indiaman. The following observations on its effects were communicated to me by Mr. Foreman, surgeon of that ship.

C A S E V.

“ November 18th, 1770. Aaron Wisdom, one of the company's recruits, complained of great lassitude and pains all over
his

his body. His gums were swelled, spongy, and bled upon the slightest touch, and his breath was exceedingly offensive; his legs were œdematous and discoloured, with large livid and yellow spots, and his whole body was covered with miliary eruptions. As he was costive, an infusion of fenna, with cremor tartari, was ordered to be taken next morning.

“ 19th. His phyfic procured him four stools.

“ 20th. He took a pint and a half of the wort.

“ 21st. The symptoms increased, he was faint on the least motion, was greatly dejected, and obliged to confine himself to his hammock. He continued the malt infusion, and had one stool in the evening.

“ 22d. He complained of great giddiness when he raised his head in his bed. The muscles of his legs and arms were indurated and discoloured in several places. Fomentations were prescribed, and the wort was continued.

“ 23d. The wort was increased to three pints, which procured him one stool.

“ 25th. The swelling of his gums increased, and his breath became very foetid. An astringent gargle, with elixir vitr. was prescribed.

“ 26th. All the symptoms worse.

“ 27th. He was costive for three days past. The purge was repeated and the wort continued.

“ 29th. He was weak and very much dejected.

“ 30th. A large fungus separated from his gums, and he lost three-quarters of a pint of blood. A strong decoction of bark, with alum, was prescribed as a gargle.

“ December 1st. His symptoms still encreasing, he, with great difficulty, was persuaded to continue the wort.

“ 3d. The fungi of his gums were much increased. Being costive, the purge was repeated.

“ 5th. His legs were very painful and much indurated; and he was so weak, that it was dangerous to move him out of bed. He now absolutely refused the wort; he was allowed sago, lime-juice, sugar, and a pint of wine in the day.

The

The scorbutic symptoms still increased. On the 26th, we arrived at Tillicherry. He was sent ashore, and died at the hospital."

C A S E VI.

" November 18th, 1770. Messenger, one of the company's recruits, complained of pain and swelling in his legs, which were covered with several large livid spots; his gums were also swelled and spongy, and he was weak and faint on the least motion.

" On the 19th. He had a gentle purge.

" 20th. He had a pint and a half of the wort.

" 21st. Much the same, only his legs were very painful. Fomentations were applied, which gave him some relief, and the wort was continued.

" 22d. The symptoms continue to increase.

" 23d. He took three pints of the wort; but he complained that it made him sick.

" 24th. He took the same quantity, which sat easier upon his stomach.

Y

" 25th.

“ 25th. The fungi on his gums were greatly encreased. An antiseptic gargle, with elix. vitr. was ordered; he continued the wort, and had three purging stools, which brought on great dejection of spirits and faintness on the least motion.

“ 29th. Being costive, a purge was given in the morning.

“ 30th. He began to nauseate the wort, which, however, was continued.

“ December 1st. All the symptoms much worse; he had one stool.

“ 2d. I could scarcely prevail upon him to continue the use of the wort.

“ 3d. He had three stools.

“ 4th. He was exceedingly low, and complained much of his mouth.

“ 5th. His mouth was rather easier.

“ 6th. He left off taking the wort, and the disease continued to encrease till we arrived at Tillicherry.

“ It is necessary to observe, that these two patients, whose cases are related, had boiled sago and sugar, and for dinner fresh meat from the captain's table; when
they

they gave over the wort, they were allowed lime-juice and a pint of red wine daily.

“ Four patients more were put upon the use of the malt infusion ; all of them, however, gave it over sooner or later, without receiving any benefit from it.

“ On the 13th of December, we arrived at Cocheen. The scorbutics were plentifully supplied with fresh meat and vegetables ; however, all of them, except such as were slightly affected, grew daily worse till the 26th, when they were sent ashore at Tillicherry.”

Having no favourite hypothesis to support, I have related the effects of the malt infusion, both in the cases which have come under my own observation, and so far as I could depend upon the intelligence received from others.

I am very sensible that the cases which are here given, differ very widely from those related by others ; yet I would esteem myself wanting in duty to the public, had I concealed them. However,

as the malt infusion has been supported by very strong instances* of its having cured the disease, it may still seem to merit some farther trial †.

In our return from St. Helena to England, in the year 1769, I had an opportunity of trying the effects of bark and rob of oranges in two scorbutic patients. It is, however, necessary to remark, that they had the benefit of a fresh diet, and that the ship was much more clean and pure than when she was off the Cape of Good Hope.

* Vide An historical Account of a new Method of treating the Scurvy, &c. by Dr. Macbride.

† In experiments of this kind, it is much to be wished that patients were selected for comparative trials. In the four cases which occurred on board the Jason, have we not some reason to suspect that the virtues ascribed to the malt infusion depended on the use of external applications, but particularly on the nourishing diet allowed to the sick, such as portable soup seasoned with shallots or garlick, the rice and currants, the sago or salep, with Madeira? Had two of the patients been put upon these articles only, and two upon the regimen and the wort, its effects might have been more precisely ascertained.

I. John Perkins, formerly subject to the scurvy, on the 7th of December, after eating a hearty supper, was seized with an epileptic fit, accompanied with difficult respiration, and violent agitations of his body; the pupils of his eyes were dilated, and did not contract when a candle was brought near them. Every method was attempted to bring him out of the fit; he took an emetic, and was blooded to eight ounces; he was supported with wine, but lay comatose and senseless during the night.

8th. He was still comatose and senseless; but at night he communicated his complaints by an application of his hand to his belly. A glyster was administered, a blister applied betwixt his shoulders, and a draught, with ten grains of musk, prescribed every four hours.

9th. About mid-day, he returned to his senses, and recovered the use of his speech; he complained of confusion in his head, and a numbness in his right arm; his gums were spongy, and slightly ulcerated; and on examining his legs,
Y 3 they

they were found œdematous and covered with red and black spots. The musk draughts and wine were continued, and in a few days he returned to duty.

On the 25th. He complained of the greatest faintness; his legs were swelled, painful, and discoloured, with several livid streaks. Fomentations were ordered, and half a dram of the bark, with two ounces of the following were taken every four hours.

Take of the rob of oranges half an ounce,

Mountain wine a pint,

Refined sugar two ounces.

Mix them together.

All the scorbutic symptoms disappeared, and in ten days he returned to duty.

II. James Hutton, on the 20th of December, 1769, complained of great lassitude, and pains in his back and limbs; both his legs swelled considerably at night, and his gums were fœtid and spongy; his right leg was covered with several scorbutic blotches, and he had two ulcers on the fore part of his leg, which

which discharged thin bloody matter. Being costive, a purge was prescribed, and he was ordered to bathe his legs frequently with warm vinegar.

On the 26th. He began the bark and antiscorbutic mixture, as in the above case.

On the 10th of January, 1770. The ulcers were perfectly healed, and no scorbutic symptoms remained.

In a voyage from St Helena, in August, 1772, I had an opportunity of trying the comparative effects of two other different remedies, in eight scorbutic cases. The first was an ale, made of tartar, juniper-berries, and sugar, recommended by Dr. Sylvester*. The other was a fermented beer

* Take of Crude tartar three ounces,
Juniper-berries four ounces,
Orange-peel,
Ginger, each six drams,
Cloves two drams,
Coarse sugar two pounds,
Boiling water three gallons.

After standing four hours in a wooden vessel, the infusion was drawn off and bottled for use. I have

beer from porter, which I made in the following manner :

Take of porter two quarts,
 Ginger coarsely powdered two
 drams,
 Sugar half a pound,
 Water four quarts.

By this means, the beer soon runs into strong fermentation, and generates much air; it was therefore made fresh every day; but, by adding a bottle of the old liquor to four quarts of fresh, its briskness was much heightened.

I. George Elder, brought up to the sea, and having had frequent attacks of the scurvy, on the 6th of August, 1772, complained of violent pain in his knees,

been since informed, that the proportion of the ingredients was pretty just; but, in the original prescription, the doctor recommended the decoction of juniper-berries and cloves to be poured upon the sugar and tartar, which, it seems, not only makes the ale more aromatic, but likewise accelerates the fermentation. In the manner I prepared it, it was three days before the least intestine motion appeared, but in six days it was pretty brisk.

and

and great faintness on motion; his legs were considerably swelled; his right knee was greatly enlarged, very painful, black, and inflexible, and his legs and thighs covered with small red spots; he had an indolent tumor upon his arm, and was troubled with great constipation.

Proper external applications were ordered; he took two purges, and, on the 10th of August, was allowed two bottles of fermented beer from porter.

For the following ten days the progress of his disease was checked, the scorbutic spots appeared of a better colour, neither was his knee so much swelled, nor so painful; and he found himself considerably stronger.

The weather becoming wet, cold, and uncomfortable, his disease began to increase rapidly.

On the 23d. The tendons of his hams were much contracted; his knees were very painful and livid, and it was with the greatest difficulty he was able to walk. The beer was continued, as
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he was extremely fond of it ; and he was allowed a pint of wine in the day. However, he became daily worse and weaker.

On the 1st of September, arriving in the Downs, he was supplied with fresh meat and vegetable soup ; but all his former complaints remaining, he was sent on shore on the 4th. In a short time, he was strong and healthy, and had no remains of the disease, which he imputed to a land air, dry apartments, and good nourishment.

III. William Macready, after being very much reduced by a tedious fever, began to complain of scorbutic symptoms in the beginning of August. His gums were very putrid, and bled much ; his legs, arms, and thighs were covered with red and livid spots ; he had a troublesome tightness on his breast, and a hard prominent tumor on the right tibia. His belly was regular, but his pulse was small and frequent. Proper topicals were applied ; he was put upon the use of the beer from porter, and took from
three

three drams to half an ounce of the bark daily.

On the 1st of September, when we arrived in the Downs, he was much stronger, the tumor on the tibia was disscussed; however, several scorbutic spots remained, when he left the ship, on the 6th of September.

For breakfast and supper, these two patients had a pint of the beer made into panado, with boiled rice, sweetened with sugar; and for dinner, fresh meat from the captain's table.

The other six scorbutics had an allowance of tea, wine, and sugar, and what fresh meat could be spared for dinner. They took two quarts of the tartar ale in the day. However, they all became worse; and had our passage been a fortnight longer, there was no reason to doubt, that several of them would have fallen sacrifices to the disease.

The tartar ale is exceedingly pleasant; it has also the advantage of being cheap; and the ingredients will keep free from decay during the longest voyage. If it
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was given early, it might, perhaps, be found a very proper drink to prevent the scurvy.

From the cases related, it will readily appear, that, during a continuance of bad weather, while the patient is confined to the damp air of a ship, nothing will prevent the calamity from spreading. Lime-juice, sugar, and wine may for a little check its violence; but when it is arrived to any degree of virulence, a dry air, dry clothes, and good nourishment, will be found of more importance than all the boasted power of medicines.

The most effectual means to prevent the scurvy in long voyages, in my opinion, is to obviate the bad consequences, of living continually upon salted provisions. The under officers, who are subject to all the same vicissitudes of weather, and perform the same duty with the seamen, from being supplied with tea and sugar, and other necessaries, seldom suffer much from the scurvy. The common sailors have it not in their power to provide

provide themselves with such necessaries ; it is, therefore, certainly the duty of their employers to make some allowance of this kind ; but the further consideration of this matter we shall reserve to the Appendix.

C H A P.

C H A P. VII.

Observations on the Rheumatism.

THIS disease is by no means frequent in hot climates, yet it sometimes attacks the common seamen from getting wet, or sleeping upon deck in the night dews; sometimes also it is the consequence of the remitting fever or the dysentery. In the first case, it is generally acute, or accompanied with fever; and, in the last, it is always chronic.

In the acute rheumatism, if the symptoms of inflammation run high, bleeding is necessary. The patient ought to be confined to a cool regimen, and a free perspiration should be kept up by de-lucent liquors, and small doses of emetic tartar, as recommended in the remitting fever. If the pains become fixed to the joints, blisters are of the greatest use, and seldom fail to remove the complaint.

When the chronic rheumatism is the consequence of long-continued fevers or obstinate fluxes, I have been seldom disappointed

appointed in curing the disease, by sweating the patient with small doses of ipecacuanha and opium, in the form of Dover's powder, N^o. 1*, which, however, ought not to be continued for any length of time, as it reduces the strength. This course should be omitted for two or three days, and then begun again, taking once or twice a week, especially when costive, as much gum guaiac.† as will gently move the belly. When the pains have continued obstinately fixed, I have, in many instances experienced the greatest advantage from the application of the

* No. 1. R Sal nitr.

Tart. vitriol. aa gr. vi.

Pulv. ipecacuan. gr. iii.

Opii pur. gr. i. fs. m. f. pulv.
subtil.

Capiat mane & vespere.

† No. 2. R Aq. cinnam. ten. ℥i. fs.

Gum guaiac. ℥ii.

Pulv. jalap. gr. v.

Syr. simp. ℥ii. m. f. haust.

Mane sumendus.

lini-

512 *Observations on the Rheumatism.*

liniment, N^o. 3*, or the warm plaster, N^o. 4†.

When, by this means, the pains are removed, the Peruvian bark, and the use of the cold bath have seldom failed to complete the cure, and to confirm the health of the patient.

Some cases of the chronic rheumatism have come under my care, where the pains have been confined to some particular part of the body, as the shoulder, the joints of the knees and arms, which have resisted every usual remedy. At last the disease has been totally and expeditiously removed by rubbing mercurial ointment upon the parts affected. The common mercurial pill was given at the

* No. 3. R Ol. olivar. ℥i.
Camphor. ʒii.
Tinct. cantharid. ʒiii.
Sp. corn. cerv. ʒii. m.
F. linimentum.

† No. 4. R Emp. commun. ℥i.
Epispast. ʒii. m.
Extende sup. alutam.

same

same time. As a salivation generally rendered the cure more incomplete, these medicines were laid aside before they produced this effect*.

From the great success which attended the practice, I was induced to believe that the rheumatism was joined with venereal pains; but I have found it as effectual in several instances where there was no reason to suspect any venereal taint. Out of several cases which occurred, I shall only subjoin the two following.

C A S E I.

Robert Lavender, in the beginning of May, 1771, complained of flying pains in his arms, back, and legs, which, at last became fixed to the joint of his right arm. No inflammation could be observed; but the severity of the pain prevented him from getting any rest. A variety of me-

* I was lately informed by Dr. Silvester, who first communicated to me this method of using mercury in obstinate rheumatic pains, that such a course had seldom failed to answer his expectations,

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dicines,

dicines were tried, and every external application, without procuring him any relief.

May 13th, lat. 30 deg. 31 min. S. His arm was considerably wasted, weak, and inflexible. The pain in the joint was almost constant, the fore finger was swelled and inflamed, and all his complaints were aggravated at night. A dram of strong mercurial ointment was ordered to be rubbed upon the parts affected night, and morning, and pills, with gum guaiac. were prescribed*.

On the 17th. The swelling of his finger was much abated, his arm was more flexible, but the pains were as severe as ever. The ointment was continued.

On the 22d. As the weather was very cold and damp, and as his mouth began

* No. 5. R Gum guaiac. ℥ii.

Sapon. Venet. ℥i.

Syr. simp. q. s. form. in pil.
gr. v.

Capiat quatuor ter die superbib. cyath.
inf. saffr.

to

to be slightly affected, his medicines were laid aside.

24th. The pain in his arm was very tolerable, and the swelling of his finger quite removed. The ointment was begun again.

On the 26th. He could use his arm with ease. His mouth being slightly affected, the ointment was only repeated at night.

On the 1st of June, he was free from every complaint ; and after taking some gentle physic, he returned to duty.

In the beginning of the month, the weather was cold and damp, being in the high latitudes off the Cape of Good Hope.

On the 17th. He complained of universal pains over his body, violent head-ach, great thirst, and other symptoms of fever, which were removed in a few days by small doses of emetic tartar ; but as the pains continued in his loins, and he complained of a return of the rheumatism in his arm, on the 20th, he was sent ashore at St. Helena, for the benefit of the land air.

On the 29th. He returned to the ship in a much worse condition than ever; he complained of great head-ach and lumbago; his right arm was numb and inflexible, and the pains in the joints were exceedingly violent; his skin was hot, and his pulse frequent. He was blooded to eight ounces; fomentations were ordered, and the draught, N^o. 6*, was prescribed morning and evening, which sweated him profusely, and mitigated all his complaints, except the fixed pain in his arm.

On the 8th of July, a dram of mercurial ointment was rubbed on the part affected, morning and night, and the prescription, N^o. 7†, was ordered twice a day.

* No. 6. R Aq. menth. f. ℥i.
 Vin. antimon. ℥i.
 Laud. liquid. gut. xxx.
 Syr. simp. ℥ii. m.

† No. 7. R Calomel. p.
 Sulphur. aur. ant. aa gr. ii.
 Conf. cynosbat. ℥i. m.
 F. bol. m. & v. fumendus.

On

On the 12th. The pain of his arm abated; the pills occasioned a slight squeamishness, but had no other sensible effect.

On the 15th. His mouth was slightly affected; the mercury was therefore laid aside.

On the 17th. He was free from every complaint, except weakness; and after taking a purge or two, returned to duty.

C A S E II.

John Ashley, caulker's mate, frequently subject to severe attacks of the chronic rheumatism, in the beginning of July, 1772, complained of flying pains all over his body, which encreased on the least motion. For these complaints, he took a variety of medicines; however, the pains became fixed to his joints, and returned with violence at night. Blisters were applied, and half an ounce of the bark was prescribed daily.

On the 26th of July. He complained of fixed pains in his right knee and both his shoulders. He was confined to his

bed ; the violence of the pain prevented him from getting any rest, and he was considerably emaciated. The joint of his right arm was swelled, but was not inflamed. Upon the strictest enquiry, there was no reason to suspect any venereal taint, neither had he ever taken the smallest quantity of mercury for any complaint. The mercurial ointment was directed to be rubbed upon the part affected, as in the above case ; and three grains of quicksilver, extinguished with honey, and made into three pills with crumb of bread, were ordered morning and evening.

31st. Through the day, he was free from pain, and was able to walk. At night, he complained of head-ach, and his breath was offensive. The mercury was omitted.

From this time all his complaints vanished ; his mouth was sore, and he had a slight salivation for six days ; he recovered his strength daily, and was soon restored to health.

C H A P. VIII.

Observations on the Venereal Disease.

THE venereal disease being an infection sui generis, neither confined to any peculiar constitution, nor any particular situation, cannot be properly classed among the prevailing diseases of the East Indies.

However, there are few diseases to which Europeans are subject in hot climates, more productive of fatal consequences than this complaint. This is not so much owing to the disease being more malignant than in temperate climates, but to the means made use of to remove it.

A warm climate relaxes the solids, dissolves the blood, and predisposes to putrefaction. Mercury given for the removal of any venereal symptom adds to the putrid colliquation of the juices. Hence, in unhealthy situations, such people as have taken much mercury frequently fall into the dysentery, or are seized with the

fever, and have a much worse chance to recover than others.

From the same causes, where heat is long continued, the constitution in general will bear a much less quantity of mercury than in temperate climates ; nay, a very small proportion of it, introduced in any form, will often run to the mouth, and be speedily carried off by salivation. The consequence is, the crasis of the blood is melted down, the constitution impaired, and rendered incapable of bearing a sufficient quantity of the specific. Hence the venereal symptoms elude its force, and remain as obstinate as ever.

This being a certain and uncontrovertible fact, it should naturally lead us never to exhibit mercury, unless urgent necessity demands its use ; and when it becomes absolutely necessary to remove venereal symptoms, it ought to be our particular study to obviate the ill effects it produces in the constitution.

In a virulent gonorrhœa, the principal part of the cure is to guard against inflammation. The patients ought to pay
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the greatest attention to cleanliness, and should live upon a cool regimen. The body ought to be kept open by mild laxatives, and the heat of the urine blunted by frequent injections of milk and water. The drinks should be infusions of linseed, decoctions of marsh mallows or gum Arabic, rendered agreeably acid by lime-juice.

In simple gonorrhœas, when such a course is begun in time, notwithstanding the many assertions to the contrary, I never saw mercury necessary to complete the cure. All mercurial purges are very improper; they keep up the irritation, endanger a gleet, and induce buboes and hernia humoralis.

The method of giving calomel overnight in small doses, and next day working it off with salts, has been known to be very effectual; but when exhibited in this way, its good effects depend upon the cathartic qualities of the preparation, and not upon its virtues as a mercurial; and, upon several comparative trials, I have found the cure as certain, and more expeditious,

peditious, when performed by mild laxatives.

The best purgatives in a recent gonorrhœa are solutions of cream of tartar, and Epsom, or Glauber's salts, in small doses, repeated every second day during the first fortnight. In this way, they keep the belly gently open, operate powerfully by urine, and greatly abate the inflammatory symptoms. When the patient has an aversion to these easy purgatives, the same intentions may be answered by castor oil, and small doses of nitre and jalap.

By this means, the inflammatory symptoms are removed; the running gradually decreases, becomes whiter and thicker, and generally in a month the cure is effected; whereas, if mercury was given at this time, the running is brought back, and, for the most part, returns to its former virulence.

Although I very much disapprove of the use of mercury in recent gonorrhœas, even after the inflammatory symptoms are removed: yet, I must confess, that several cases have come under my care, where
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the disease has resisted the antiphlogistic method, either owing to frequent infections or improper treatment. In such cases, I have seen the best effects from three grains of calomel given over-night, or from rubbing in a dram of strong mercurial ointment upon the thighs, having recourse to purgatives at proper intervals, to prevent the mouth from becoming affected.

But, in the early state of the disease, the cure has been often speedily and as effectually accomplished by throwing up the urethra, three or four times a day, a small quantity of some astringent injection *.

During the cure by injection, the patient should avoid exercise, and live upon a spare diet. If the injections occasion

* The following are those I have used with greatest success.

No. 1. Take of rose-water eight ounces,
Sugar of lead half a dram,
White vitriol five grains.

No. 2. Take of corrosive sublimate one grain.
Water eight ounces.

pain

pain or irritation in the passage, a little sweet oil may be injected ; and if the heat of the urine and erections become violent, the use of them should be suspended till these symptoms are removed by the cooling treatment already mentioned.

When buboes proceed from a recent infection, I have always endeavoured to disperse them by antiphlogistic purges, a cooling regimen, and the application of mercurial ointment ; neither do I ever remember to have seen a pox the consequence of this treatment.

From the success attending this practice, I have been induced to believe, that buboes are frequently symptomatic from irritation in the urethra ; and that the matter contained in them, either does not in the least differ from that in any other abscess, or that the mercury made use of to discuss them, is sufficient to subdue the venereal virus.

The other symptoms which accompany or succeed a gonorrhœa, such as the hernia humoralis, phymosis, stranguary, and
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gleets,

gleets, I shall purposely pass over, these being generally occasioned by irregularities or improper treatment. When they appear in hot climates, I have found them yield to the common treatment.

When a gonorrhœa is accompanied with shankers, warts, or raspberry-like excrescencies on the penis, it cannot be cured without mercury ; therefore, after removing the inflammation, by a cool regimen, immediate recourse is to be had to the specific.

These symptoms, though topical, will for the most part, require as much mercury to remove them effectually as in a confirmed lues, of which they are a symptom ; therefore it ought to be used externally and internally at the same time.

When the use of mercury becomes necessary to remove any symptom of a confirmed lues, in hot climates, particularly in unhealthy situations, half an ounce of bark ought to be taken daily, during the mercurial course. By this means, the putrid dissolution of the blood is prevented, and the constitution of the patient enabled

enabled to bear a sufficient quantity of the specific to subdue the venereal taint. Before I prescribed the bark in this manner, I have had several venereal cases under my care, which have eluded the power of mercury.

For the cure of a confirmed pox, I have always trusted to the simple preparations of mercury, such as the common mercurial ointment, or crude quicksilver, extinguished in mucilage, honey, or rhubarb*.

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* No. 3. The following is in imitation of Plenke. Take of quicksilver a dram,

Gum Arabic reduced to mucilage two drams.

Let the quicksilver be rubbed with the mucilage till the globules of mercury entirely disappear; afterwards add gradually eight ounces of cinnamon-water and an ounce of syrup of sugar.

A spoonful or two may be taken night and morning.

No. 4. Take of quicksilver one dram,

Honey a sufficient quantity.

Let the quicksilver be rubbed with the honey till the mercurial globules entirely disappear; afterwards add a dram of crumb of bread, or as much as

As there is no possibility of ascertaining the quantity of mercury which different constitutions will bear, it is always prudent to begin with small doses, and to keep gradually encreasing them. If, during the use of mercury, symptoms of salivation appear, it should be immediately suspended.

When one preparation of mercury does not succeed, I have seen great advantage from using others. These which I have tried with the greatest success are Dr.

is sufficient to form them into a mass, to be divided into sixty pills.

From three to six of these may be taken at night and morning.

But of all the different medicines which I have employed to extinguish mercury, rhubarb answers the intention most effectually.

No. 5. Take of quicksilver one dram,
Rhubarb a scruple.

Moisten the quicksilver with any thin syrup, and grind them till the globules of mercury are perfectly incorporated; then add a sufficient quantity of crumb of bread to reduce the whole to an uniform mass, to be made into sixty pills, which may be taken as above.

Plum-

Plummer's powder, or the precipitate from calomel recommended by Dr. Sanders. The saline preparations of mercury are never to be trusted to; the solution of sublimate is very precarious; and, in warm climates, as it ruins the stomach and dissolves the fluids, it ought to be carefully avoided.

During a mercurial course, the strength should not be allowed to sink; the patient ought therefore to be supported by a nourishing but cool diet; he should not use any strong exercise nor expose himself to the heat of the sun; he should be kept exceedingly cool; neither should flannel, or any covering, be put upon his head, as by this a salivation is induced.

If such gentle treatment was followed, and the bark taken along with the mercury, the disease may be almost always removed without any risk to the constitution.

A P P E N D I X,

C O N T A I N I N G

- I. *Observations on the Sea Provisions.*
- II. *Regimen for the Sick.*
- III. *Observations on the Medicine Chest.*
- IV. *Directions to Europeans who go to
Bengal.*
- V. *Translation of Prescriptions in the pre-
ceding Work.*

A P P E N D I X.

S E C T. I.

*Observations on the Sea Provisions, and
Alterations proposed.*

THE most frequent and fatal diseases to which seamen are subject, depend upon a moist atmosphere and unwholesome aliment. The first is the most powerful predisposing cause of putrid diseases ; and when the last concurs, it never fails to produce them. If these diseases could be prevented by proper diet, seamen would be the most healthy people in the world.

When the constitution is vigorous, strict regulations, with respect to aliment, are often unnecessary, and sometimes hurtful ; however, some degree of attention is essentially necessary to preserve health. The

diet ought to be varied according to the state of the body, the seasons, and the climate. In cold countries, the most wholesome and nourishing diet is a due mixture of vegetable and animal food. In sultry climates, the aliment ought to consist mostly of vegetables. Nature and common sense shew such variations to be indispensibly necessary. Salted provisions might be very proper nourishment to the laborious who breathe a pure land air, and who are not totally debarred from vegetables; but in the circumstances of the sailor, exposed to the influence of an unwholesome atmosphere, and to the damps and uncleanness of a ship, no diet could have a greater tendency to produce diseases.

The provisions with which the East-India ships are supplied, are of the very best in their kind, and, with respect to the quantity allowed much exceed that in any other service*.

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* The daily allowance to each mess, consisting of five men, is eight pounds of salted beef, or seven pounds

In hot climates, even when the body is in the most healthy state, the humours have a tendency to become putrid, which can only be prevented by fresh nourishment. Full meals of animal food, upon which the English seamen are necessarily obliged to live, is the reason why they are so generally afflicted with the scurvy, and suffer so much from putrid diseases.

As the health of seamen in voyages to the East Indies must greatly depend upon a short allowance of salted provisions, it is to be wished that some alterations in victualling the ships were introduced.

If a sufficient quantity of coarse sugar and tea were allowed for breakfast, instead

pounds of pork, and stock-fish twice a week so long as it lasts : the fresh articles are, three pounds and a half of flour for pudding, or two pints and a half of peas, calavances, or a sufficient quantity of yams. With the stock-fish, they are usually allowed potatoes.

The other articles are mustard, oil, and vinegar ; each man is allowed one-fifth of a pint of brandy or arrack, and they are seldom put to a short allowance of biscuit.

of animal food, the bad consequences of living constantly upon salted provisions would be obviated; and I apprehend, that such an alteration might take place in all the East-India ships, without incurring the least extraordinary expence to the employers.

Seven or eight pounds of salted beef or pork in the day is certainly too much for five men, and is more than they would use, had they other articles of sustenance. Now, allowing that one-fourth of the salted provisions were deducted, it would more than amply counterbalance the expence incurred by laying in tea and sugar.

Rice, in the homeward-bound passage is sometimes provided instead of biscuit. It is much to be wished, that this practice was more general, as the best bread becomes unsound, and generates weevils or maggots. Rice can be procured in India at a very cheap rate; the only objection which can be offered, is the extraordinary quantity of water necessary for boiling it.

One great cause why we have succeeded so ill in preventing marine diseases, and particularly the scurvy, seems to be a ridiculous attention to novelty. We fondly adopt every new proposal, and often neglect articles whose virtues have been confirmed by experience. Amongst these, I shall only mention oranges and lemons, which, of all vegetables, keep best at sea.

In voyages to the East-Indies, the most of the outward-bound ships refresh at Madeira, the Cape, Johanna, or Madagascar. At any of these places, a sufficient quantity of lemons or oranges can be easily procured; and their juice may be preserved sound during the longest voyages, by mixing with it a fourth-part of spirits. By this means, abundance of these salutary articles might be provided to mix with the liquor, both at sea and in those harbours in India where vegetables are too dear to become an article of the ship's allowance.

That such a scheme may be properly conducted, a small sum should be allowed, and an officer appointed to purchase these

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fruits;

fruits; for the greatest reason of this being neglected is, that it is assigned to the province of none. This would be only following the prudent and humane practice of foreigners; the Danes, in particular, never fail to lay in abundance of these articles, and at sea make it the duty of the fifth officer, to see that the juices are properly distributed in punch.

If such a necessary part of diet were added to the ship's provisions, we may certainly affirm, that the scurvy would never rage with fatality; the morbid disposition of the fluids, occasioned by the use of salted provisions would be prevented; and seamen, after having performed long voyages, upon their arrival in unhealthy harbours, would not be so subject to the epidemic diseases of the country.

The healthiness of seamen in voyages from China is the strongest proof of the advantages of such an alteration; the scurvy or any putrid disease is seldom to be seen. This can be imputed to no other cause but to the tea and sugar which every seaman lays in for his sea-stores. In other respects,

respects, the circumstances are the same and the voyage is as tedious*.

Every motive seems to enforce this proposal; a great many lives would be saved by it, and voyages, even when undertaken at improper seasons, would be rendered more certain. How many instances happen of ships being obliged to put back on account of the scurvy, contracted by being detained for a short time, in bad weather, off the Cape of Good Hope, when the disease would never have appeared, had a proper diet been observed from the beginning of the voyage.

The great advantages which would accrue to the company's recruits from such an alteration, are too obvious to be mentioned. These people are in a condition

* On the 30th of May, 1772, we spoke to the Lord North Indianman off the Cape, and kept company with her for a few days. She sailed from Madraſs a little after the Talbot left China, but intended putting into False Bay, as many of her people were afflicted with the scurvy. At that time, all our people were in perfect health, nor was there the most distant symptom of the disease amongst them.

much

much more to be pitied than the common sailors, who, accustomed to the hardships of a sea life, seldom fail to provide themselves with a proper stock of clothes and some tea and sugar; but the company's recruits having bartered their apparel for liquor, and setting out to sea without a single necessary, all they can possibly expect, from the time they leave England till they arrive in India, is the ship's provisions. Being often crowded together, it generally happens, that, in the course of the voyage, many of them are seized with fevers, to which they would certainly fall victims, if not allowed wine and other necessaries from the humanity of the captain.

It is therefore much to be wished, that, although the alterations in the sea-provisions should never take place, that at least a daily allowance of tea and sugar were granted to the recruits, who are more immediately in the service of the company, and who are yearly sent out at so great an expence. All that is farther necessary for the preservation of their health is cleanliness and exercise.

In every ship carrying out recruits, a proper military officer should be sent, whose particular province it should be to prevent them from selling their clothes, to see that they keep themselves clean, that their hammocks be aired from time to time, and that they use proper exercise, in doing the duty of the ship, or in learning military discipline.

S E C T. II.

Regimen for the Sick.

AMONGST the many disadvantages which attend the practice of medicine at sea, the want of a proper regimen for the sick may be justly esteemed the greatest.

A regulation of diet is necessary in all diseases, and without it the most powerful medicines will be prescribed to little advantage; yet, in the ships employed by the East-India company this important article has either been overlooked or totally disregarded.

During the course of a fever or flux, something more is necessary than the cordials

dials of the medicine-chest. In a low state, what will the serpentaria, volatiles, and other medicines of this kind, avail? But when the patient is in a convalescent state, reduced to the last extremity of weakness, and perhaps having a strong craving for food; when the digestive powers are so much impaired, what nourishment will the common provisions of the ship afford him? He has, however, nothing else, unless the humanity of the captain allow him wine and other articles of nourishment; but this being too great an expence for any individual, must always be very precarious.

If the humane and generous provision made for the sick on board the Talbot was general in the service, there would be no occasion for any complaint of this kind, where the Commander generously supplied them with as much wine as was necessary, and with articles of proper nourishment from his own table.

In the course of last voyage, near thirty dozen of wine was necessarily expended; and I will venture to affirm, that many of
the

the soldiers and seamen, who must otherwise have fallen sacrifices to disease and weakness, owed their lives to this laudable humanity.

If an allowance of wine was settled in the service, the other requisite articles of nourishment may be reduced to a very small number; rice, sago, portable soup, and a few of the usual dried fruits. If such alterations as have been proposed were made, with respect to diet and regimen for the sick, the condition of the common sailor and soldier, both when in health, and when afflicted with diseases, would be rendered as comfortable as a sea life will admit of, and the advantage accruing to the company would more than counterbalance the extraordinary expence.

S E C T. III.

Observations on the Medicine-Chest.

FROM the account of the diseases which occur at sea, as well as in different places of the East Indies, it will appear how little occasion there is for a great
variety

variety of medicines, and how ridiculous the practice, to fit out the medicine-chest with all the empty shew of an apothecary's shop.

Amongst all the lists of medicines which I have perused, above an hundred and fifty articles are the lowest number which have been carried out. In such a numerous catalogue, there are many articles which are perfectly insignificant, such as the variety of plasters, ointments, distilled waters, &c. Some of them ferment, and soon spoil, such as electaries, confections, and syrups; therefore, allowing they were ever really useful, nothing can be expected from them.

Most of the tinctures are exceptionable, as they are very expensive, and may be given in a more certain form.

Among the class of purgatives, many of them are too drastic for the cases which usually occur. Of this kind are aloes, scammony, and pil. colocynth. Others do not keep sound for any length of time, such as the jalap. Therefore, if any at all, a very inconsiderable quantity of these
should

should be carried out, which would make an ample allowance for the more lenient and useful purges, such as the neutral purging salts, cremor tartari, oleum ricini, fenna, and rhubarb.

To mention every article in the medicine-chest would be tedious; and to criticise on particular formulas, supported by the authority of eminent physicians, whose observations I truly revere, would be disagreeable. Nothing has been farther from my intention than to find fault, and any strictures already made upon medicines can be meant to extend no farther than to their use in the diseases of hot climates.

The great disadvantage of having a numerous catalogue of medicines, where only a certain fixed sum is allowed for purchasing them, must be sufficiently obvious. A great part of that sum is expended on medicines which are entirely useless, or such as will never be prescribed with any intention to remove diseases. The consequence of this is, that there is a very scanty allowance of the useful remedies

dies so much wanted. In case of sickness, they are quickly expended after leaving England, and cannot be procured again but at the most exorbitant price, and seldom at any rate, unless carried out as a part of private trade.

The following is an exact list of the quantity of those medicines which are judged indispensibly necessary, and were barely sufficient in a China voyage.

The bark and salts will be found greatly to exceed any quantity ever sent out; however, a greater allowance of the bark is indispensably necessary for the use of those ships which must remain at Bengal during the sickly season. If a surgeon is abundantly supplied with the following medicines, and a proper regimen allowed for the sick, we may venture to affirm, that he will find it no difficult matter to remove all the dangerous diseases to which Europeans are subject in voyages to the East Indies.

Peruvian bark	-	-	-	-	40 pounds,
Cascarilla	-	-	-	-	3 pounds,
Ipecacuanha	-	-	-	-	3 pounds,
					Emetic

Emetic tartar	- - - -	4 ounces,
Glass of antimony (for anti-		
monial wine)	- - - -	1 ounce,
Opium	- - - - -	8 ounces,
Laudanum	- - - - -	2 pounds,
Gläuber salts	- - - -	28 pounds,
Epsom salts	- - - -	28 pounds,
Soluble tartar	- - - -	2 pounds,
Quicksilver	- - - - -	2 pounds,
Calomel	- - - - -	1 pound,
Salt of tartar	- - - - -	2 pounds,
Salt of hartshorn	- - -	8 ounces,
Cream or crude tartar		
Strong spirit of vitriol	- -	2 pounds,
Gum Arabic	- - - -	8 pounds,
Blistering plaster	- - -	3 pounds.

It is not meant that the above should exhibit all the variety of the medicine-chest; other remedies are required for surgical cases, and for those diseases which may occur sporadically; however, a very trifling quantity of other medicines will answer the purpose.

S E C T. IV.

Directions to Europeans who go to Bengal.

FROM the observations made in the former part of this work, it will appear, that, even in the most unhealthy settlements in the East Indies, sickness is only periodical a few months in the year, and that the remaining part is healthful, or at least never productive of general sickness. This should naturally lead such Europeans as intend to settle in that part of the world to arrive at their destined residence during the healthy season; for, as a humane and excellent writer justly observes †, “ the constitution of Europeans, by length of time, becomes seasoned to the East and West Indian climates, if it is not injured by the repeated attacks of sickness upon their first arrival. Europeans, therefore, when thus habituated, are generally subject to as few diseases as those who reside at home; insomuch that many persons,

† Dr. Lind, on the Diseases incidental to Europeans in Hot Climates, p. 146.

dreading what they may again be exposed to suffer from a change of climate, chuse rather to spend the remainder of their lives abroad than to return to their native country."

Of all our settlements, Bengal proves most destructive to Europeans; recruits are annually sent out there, and a greater number of adventurers visit that territory than all the rest of our dominions in the East Indies.

The commercial interest of the company and the success of the voyage make it necessary that the ships set out from England early in the season; by which means they arrive at Bengal immediately before or during the rainy months, and the passengers and recruits are exposed to repeated attacks of sickness upon their first arrival.

The question which naturally occurs here is, How is this to be obviated? In my opinion, it may be effected in the following manner; and, if it is judged practicable, it would seem to merit some degree

of attention, as it will prove the certain means of preserving every year a number of lives.

As the coast of Coromandel is at no considerable distance from Bengal; such Europeans as intend settling at the last place ought to pass the months of July, August, and September on that healthy coast. The soldiers who are sent out to recruit the regiments at Bengal may also pass some time there; or, perhaps, it would still be better to supply Bengal with the Madras regiments, who have been seasoned at least for a twelve-month. They might be transported during the healthiest season; and the number of lives which would be saved by this means would more than counterbalance the expences of the additional embarkation.

Through want of attention to this simple and effectual means of preserving the constitution of Europeans upon their first arrival, incredible numbers are yearly carried off at Bengal. Here I cannot help lamenting the untimely fate of many of my acquaintances, who were sent out in the
Talbot,

Talbot, in the year 1768*. Out of seventeen Cadets and other adventurers, only eight survived the sickly months; and we cannot suppose that the mortality would be less among the soldiers, who accompanied them.

The most effectual method to preserve the lives of the seamen, who must necessarily be stationed every year at Bengal, during the sickly season, is to anchor the ships at the most healthy stations in the river, and to allow them a sufficient quantity of wine when brought low by diseases.

Of all the stations in the river, Culpee is the most unhealthy; therefore, if consistent with the interest of the company, the ships should lie at Cogeree, which is at no great distance.

I shall conclude the whole with a quotation from Dr. Lind, one of the greatest

* Two Majors, three Captains, and six Lieutenants, who came out in the Talbot and remained at Calcutta, by using proper precautions, escaped the sickness of the season.

medical improvers in the present age. “ The recent examples of the great mortality in hot climates ought to draw the attention of all the commercial nations in Europe towards the important object of preserving the health of their countrymen, whose business carries them beyond seas. It is found, that sickly and unhealthy situations require a constant supply of people, and of course drain their mother-country of an incredible number of its inhabitants, and some of these too its most useful individuals.”

S E C T. V.

AS most of the diseases in the East Indies very suddenly prove fatal, and as many Europeans have it not in their power to call in medical advice, for the benefit of those, the principal prescriptions in the preceding work are translated, and such farther directions added as will render the administration of the medicines safe.

Pre-

Prescriptions for the Fever.

N^o. 1. Take of emetic tartar a grain,
Magnesia eleven grains.
Mix them together, and divide them
into four papers; one or two may be
taken every hour.

N^o. 2. Take of manna an ounce,
Emetic tartar from two to
four grains.
Dissolve them in eight ounces of
water.

Two table-spoonfuls may be taken every
hour.

N^o. 3. Take of Epsom salts from six drams
to an ounce and half,
Emetic tartar two grains.
Dissolve them in seven ounces of
water.

Four table-spoonfuls may be taken
every hour.

Emetic tartar taken in the above forms
seldom fails to cleanse both the stomach
and bowels thoroughly, and, by producing
an equable perspiration, either brings on a

remission of the fever, or is all that is necessary to prepare the patient for the use of the bark. It is also proper to remark, that the dose of this antimonial should always be adapted to the state of the stomach. When the vomiting of bile is severe, a small quantity will answer the purpose. The safest, and, perhaps, most effectual method of exhibiting this medicine, is to begin with small doses, and to repeat them hourly till they operate.

When the prescriptions, N^o. 1 or 2, failed to procure a stool, and if the pain at stomach, or bitter taste in the mouth remained, the purge, N^o. 4, was given next day. When a violent paroxysm of the fever was dreaded, the prescription, N^o. 5 or 6, was ordered, both with an intention to clean the first passages, and to mitigate the succeeding feverish fit.

N^o. 4. Take of Epfom falts from fix
drams to an ounce
and a half,
Decoction of tamarinds
eight ounces.

Mix

Mix them together and then strain them.

This may be taken in the morning,
at two separate draughts.

N^o. 5. Take of Peruvian bark half an
ounce,

Water twelve ounces.

Boil to six ounces.

After straining, add six drams
of Epsom salts, and half an
ounce of tincture of bark or
brandy.

Four table-spoonfuls may be taken every
hour, till two or three stools are
procured.

N^o. 6. Take of Peruvian bark six drams.

Soluble tartar two drams,

Syrup of sugar a sufficient
quantity to make them
into an electary.

The size of a nutmeg may be taken
every two hours in a little wine and
water.

After these necessary evacuations are
performed, recourse must be had to the
bark, in as large doses as the stomach
will

will bear, without paying any regard to the remissions or exacerbations of fever. If the vomiting continues, or when the stomach is squeamish, a grain of solid opium may be given previous to its use. The most effectual method of prescribing the bark is in powder, from half a dram to two drams, every two hours, either mixed in port, claret, or the saline * draughts ; but when the stomach is too weak to bear it in substance, it may be given in decoction, as in the following form.

N^o. 7. Take of Peruvian bark in powder
two ounces,

Water two pints.

Boil till one pint of the liquor is wasted, adding, about the end of the boiling, three drams of gum Arabic. After passing the liquor through a coarse strainer,

* Take of salt of tartar a scruple,

Juice of lemons,

Weak cinnamon water, each half an ounce,

Refined sugar a dram.

Mix them together,

add

add two ounces of tincture of bark.

Two or three table-spoonfuls may be taken every hour.

If the fever is accompanied with a purging, five drops of laudanum ought to be added to each dose of the bark, till that evacuation ceases ; or, if the patient is costive, a few grains of rhubarb or soluble tartar, as in the prescription, N^o. 6, may be added.

But nothing is more necessary than to persist in the use of this remedy ; for, although at first it may seem to encrease all the symptoms, yet when a proper quantity is used, the fever will either be soon removed, or its dangerous tendency prevented.

N^o. 8. Take of water six ounces,
 Salt of hartshorn two scruples,
 Brandy an ounce,
 Syrup of sugar half an ounce.

Mix them together.

2

A spoon-

A spoonful may be given occasionally,
when the patient is low, feeble, and
faint.

Page 154. Take of ipecacuanha ten grains,
Emetic tartar two gr.
Mix them together.

Page 165. Take of bark decoction two
ounces,
Weak spirit of vitriol
ten drops.

Make them into a draught, to be repeat-
ed every three hours.

Page 179. Take of camomile flowers half
an ounce,
Salt of tartar one dram,
Boiling water eight
ounces.

Let them stand together for two
hours; then strain for use.

Page 208. Take of cinnamon water an
ounce,
Musk fifteen grains,
Refined sugar two
drams.

Grind

Grind the sugar and musk together, and
add gradually the cinnamon water.

Page 216. Take of mint water an ounce,
Antimonial wine thirty
drops,
Liquid laudanum
twenty drops.

Mix them for a draught to be taken at
bed-time.

Prescriptions for the Dysentery.

N^o. 1. Take of ipecacuanha in fine powder ten grains,
Emetic tartar two grains.
Mix them well together, and divide them into two powders.

One of them may be taken for a dose, and the other repeated in an hour, if the first does not operate sufficiently.

But when the case is accompanied with fever, the following prescription will be found to answer the purpose better.

N^o. 2. Take of a decoction of tamarinds eight ounces,

Emetic

Emetic tartar from two
to four grains.

Dissolve the emetic tartar in the decoction ; two spoonfuls may be taken every hour, till two or three stools are procured.

N^o. 3. Take of Epsom salts from six
drams to an ounce
and a half.

Dissolve them in six ounces of boiling water, and add a sufficient quantity of cream of tartar or lime-juice to render them agreeably sour ; some brandy may be also added occasionally. This may be taken at two separate draughts in the morning.

N^o. 4. Take of castor oil from half an
ounce to ten drams,
Pepper-mint water or lime-
juice half an ounce.

Make them into a draught to be taken
in the morning.

N^o. 5. Take of ipecacuanha from eight
to twelve grains,
Emetic

Emetic tartar from one to
two grains,

Balsamic syrup a sufficient
quantity to make them
into four pills.

One may be taken every three or four
hours.

N^o. 6. Take of pure opium a dram,
Castile soap three drams,
Syrup of sugar a sufficient
quantity to form them
into a mass for pills.

From four to six grains of the above
pill may be taken every night at bed-
time, adding occasionally two or three
grains of ipecacuanha.

N^o. 7. Take of bark in powder an ounce,
Cascarilla in powder half
an ounce,
Cinnamon a dram,
Gum Arabic three drams,
Water one pound.

Boil to nine ounces, adding toward the
end the cinnamon and gum Arabic.
After straining, add two ounces of
tinc-

ture of bark or red wine. Four table-spoonfuls may be taken every two hours, with five or more drops of laudanum, to prevent it from running off by stool.

N^o. 8. Take of Peruvian bark in powder
fix drams,
Cascarilla in powder three
drams,
Syrup of sugar a sufficient
quantity to reduce them
to the form of an elec-
tary.

The size of a nutmeg may be taken every three hours, washing it over with a glass of red wine.

N^o. 9. Take of powdered starch six drams,
Cinnamon one dram,
Gum Arabic half an ounce
Water three pints.

Boil to two pints, adding towards the end the cinnamon and gum Arabic. After straining and sweetening it with sugar, a sufficient quantity of the acid

Elixir of vitriol may be added to render it agreeably acid. This may be used for ordinary drink when the irritation in the bowels is violent.

N^o. 10. Take of shavings of logwood
three ounces,
Cinnamon two drams,
Water four pints.

Boil to two pints, adding the cinnamon towards the end ; then strain the decoction for use. A cupful may be taken three or four times a day.

Prescriptions for the Bilious Colic.

Page 243. Take of a decoction of tamarinds eight ounces,
Emetic tartar a grain
and a half,
Epsom salts an ounce.

Dissolve the emetic tartar and salts in the decoction.

Page 244. Take of musk fifteen grains,
Opium a grain,
White sugar fifteen
grains.

C c

Grind

Grind the musk and sugar together, then add the opium, and reduce them into a bolus with a sufficient quantity of cordial confection.

Page 244. Take of weak cinnamon water
Spirit of Mindererus, of
each three ounces,
Saline aromatic spirit
two drams,
Syrup of sugar an
ounce.

Make them into a julep.

Page 246. The same as N^o. 4, for the fever.

Prescriptions for the Disease of the Liver.

N^o. 1. Take of manna an ounce,
Soluble tartar half an
ounce.

Diffolve them in six ounces of water.

This may be taken in the morning at two separate draughts.

N^o. 2. Take of camomile flowers half an
ounce,
Salt

Salt of tartar two drams,
Boiling water eight ounces.
Let them stand together for four hours.
After straining, a wine-glass may be
taken every two hours.

N^o. 3. Take of calomel two grains,
Soap pill ten grains.
Make them into two pills to be taken
at bed-time.

N^o. 4. Take of Castile soap two scruples,
Rhubarb ten grains,
Syrup of sugar a sufficient
quantity to form them
into a mass, to be di-
vided into twelve pills.
Four may be taken thrice a day, drink-
ing after them a cupful of the in-
fusion, N^o. 2.

Prescriptions for the Rheumatism.

N^o. 1. Take of nitre,
Vitriolated tartar, each six
grains,
Ipecacuanha three grains,
C c 2 Opium

Opium a grain and a half:
Reduce them to a fine powder, to be repeated morning and night.

N^o. 2. Take of simple cinnamon water
an ounce and half,

Gum guaiac. two scruples

Jalap five grains,

Syrup of sugar two drams.

Make them into a draught, to be taken
once or twice a week, especially when
costive.

N^o. 3. Take of camphor two drams,
Dissolve it in an ounce of olive
oil, then add

Tincture of Spanish flies
three drams,

Spirit of hartshorn two
drams.

Make them into a liniment. A little
may be rubbed upon the part affected
twice a day.

N^o. 5. Take of gum guaiac. two drams,
Castile soap one dram,
Syrup of sugar as much
as is sufficient to reduce
them

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them into a mass to be
divided into thirty-six
pills.

Four may be taken three times a day,
drinking after them a cupful of
sassafras tea.

N^o. 6. Take of mint water an ounce,
Antimonial wine sixty
drops,
Laudanum thirty drops,
Syrup of sugar two drams.
Make them into a draught to be taken
morning and evening.

N^o. 7. Take of prepared calomel,
Golden sulphur of anti-
mony, each two grains,
Conserve of hips enough
to make them into a
bolus.

To be taken evening and morning.

Prescription for the Antiscorbutic Drink,
Page 303.

I find I have been mistaken both in
regard to the proportion of the ingredi-
ents, and the exact manner of preparing
the

the Tartar drink. The following is Doctor Silvester's prescription.

“ Take of crude white tartar powdered
three ounces,
Juniper berries bruised four
ounces,
Ginger in powder two drams,
Cloves in powder one dram,
Coarse sugar five pounds,
Water six gallons.

“ Boil them half an hour; then pour the whole into a tub, and when nearly cold into a six gallon cask. If this liquor does not ferment within two or three days time, add half a pint of porter.”

“ It may be given a few hours after the fermentation is begun, from one to three pints daily.”

T H E E N D.

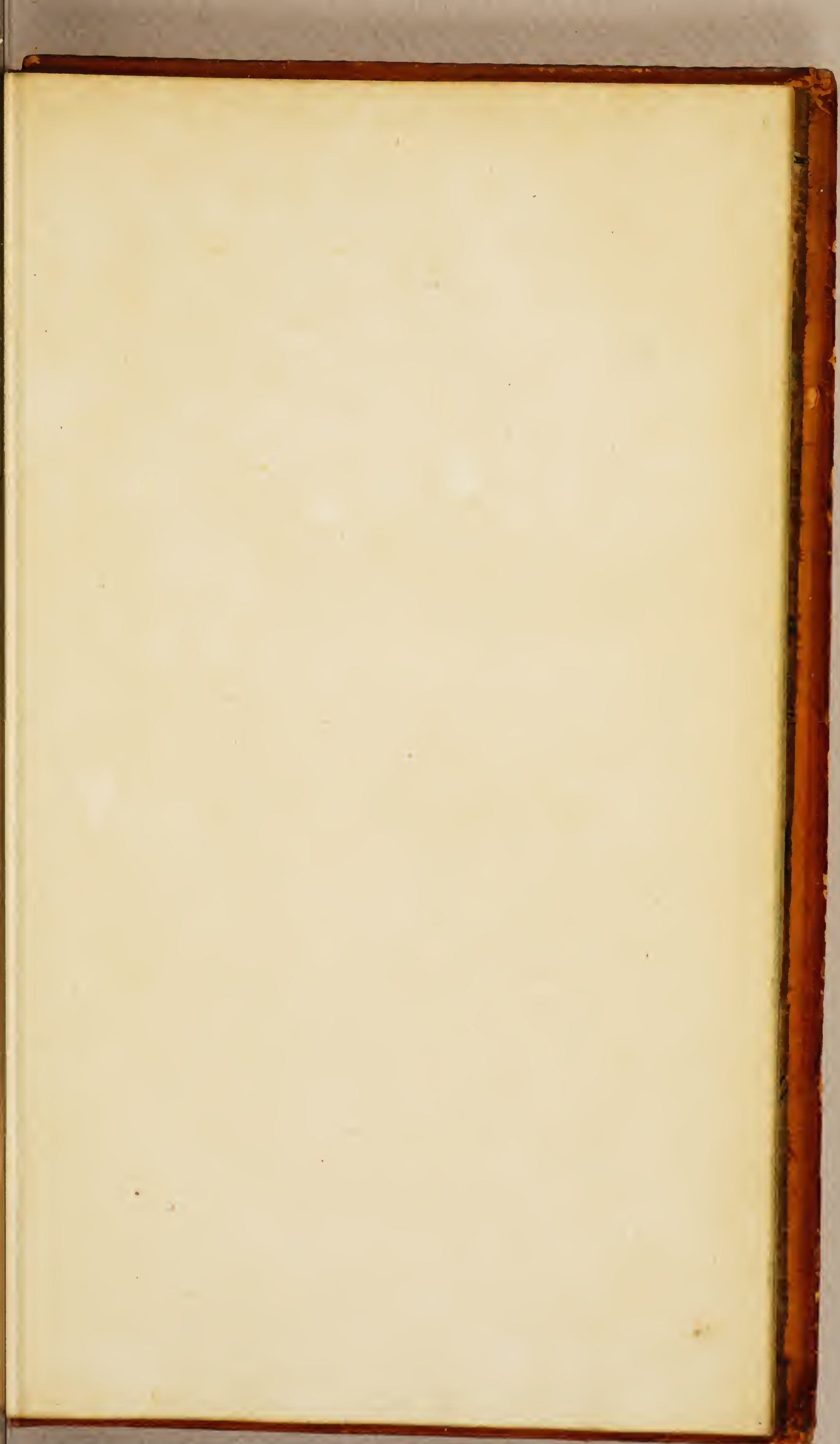
E R R A T A.

Page	line	
39	3	for <i>is</i> read <i>are</i> .
48	23	for <i>station</i> read <i>stations</i> .
50	6	dele <i>there are</i> .
60	5	for <i>is</i> read <i>are</i> .
63	ult.	for <i>of</i> read <i>with</i> .
66	22	for <i>degrees</i> read <i>degree</i> .
70	1	of the note, for <i>is</i> read <i>are</i> .
74	7	for <i>are</i> read <i>is</i> .
124	21	for <i>apthæ</i> read <i>aphthæ</i> .
128	18	for <i>vebices</i> read <i>vibices</i> .
130	19	for <i>fever</i> read <i>fevers</i> .
133	2	for <i>issue</i> read <i>issues</i> .
139	15	for <i>renders</i> read <i>render</i> .
145	ult.	for <i>antiseptic</i> read <i>antiseptic</i> .
146	24	after <i>this</i> add <i>last</i> .
148	5	for <i>antiseptic</i> read <i>antiseptic</i> .
153	13	after <i>in</i> add <i>an</i> .
161	9	after <i>he</i> add <i>was</i> .
167	19	for <i>was</i> read <i>were</i> .
168	6	after <i>selected</i> add <i>from</i> .
179	3	for <i>bullent</i> read <i>bullient</i> .
180	16	for <i>were</i> read <i>was</i> .
183	1	for <i>miliary</i> read <i>miliary</i> .
206	20	for <i>was</i> read <i>were</i> , and l. 23, for <i>were</i> read <i>was</i> .
214	15	dele <i>was</i> .
217	7	Sect. V. for <i>was</i> read <i>were</i> .
230	20	for <i>any</i> read <i>an</i> .
231	2	dele <i>soon</i> .
237	12	for <i>No. 4</i> , read <i>No. 2</i> .
242	12	after <i>visit</i> add <i>him</i> .
243	7	for <i>behorie</i> read <i>semihora</i> .
244	20	for <i>acernat.</i> read <i>aromat.</i>
266	24	for <i>compliment</i> read <i>complement</i> .
283	11	after <i>which</i> add <i>was</i> , and dele <i>was</i> in the next line.
302	10	dele <i>were taken</i> .
334	9 and 10,	for <i>is</i> read <i>are</i> , and line 13, for <i>were</i> read <i>was</i> .
336	10	for <i>a necessary part of diet</i> read <i>necessary articles</i> .
338	21	for <i>were</i> read <i>was</i> .

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